US011050683B2

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Ban et al.

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(54) **SYSTEM FOR PROVIDING DIALOG CONTENT**

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(73) Assignee: **Samsung Electronics Co., Ltd.**, Suwon-si (KR)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 352 days.

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(30) **Foreign Application Priority Data**

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(51) **Int. Cl.**
H04L 12/58 (2006.01)
H04L 29/06 (2006.01)
(Continued)

(52) **U.S. Cl.**
CPC ***H04L 51/02*** (2013.01); ***H04L 51/04*** (2013.01); ***H04L 69/08*** (2013.01); *G06F 40/40* (2020.01);
(Continued)

(58) **Field of Classification Search**
USPC 709/206
See application file for complete search history.

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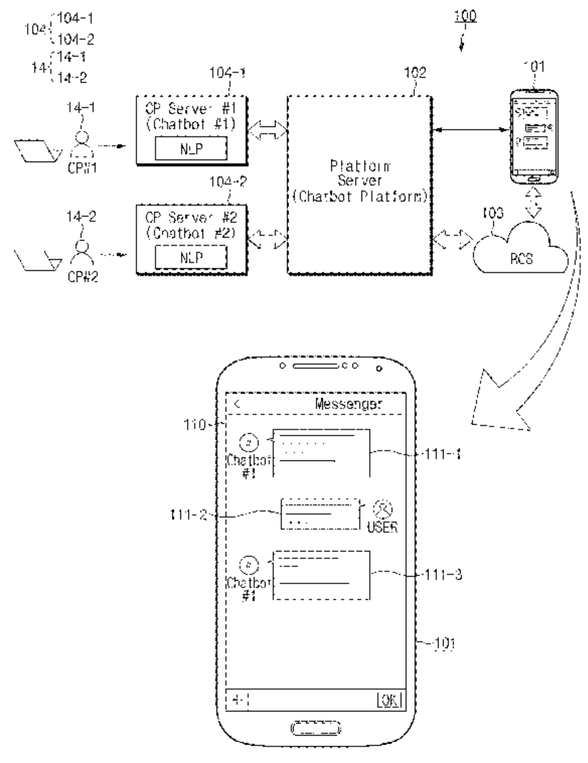
Primary Examiner — Todd L Barker

(57) **ABSTRACT**

An electronic device is provided. The electronic device includes a housing, a display configured to be exposed through one surface of the housing, a communication module configured to communicate over a first network compliant with a first protocol or a second network compliant with a second protocol, a processor configured to be electrically connected with the display and the communication module, and a memory configured to be electrically connected with the processor and store a specified application. The memory stores instructions, that when executed, cause the processor **420** to execute the specified application, designate a CP server by interacting with a platform server over the second network, receive an initial response message generated by the designated CP server over the first network, and verify
(Continued)



a first identifier of the designated CP server based on the first protocol from a source of the initial response message.

20 Claims, 18 Drawing Sheets

(51) **Int. Cl.**

H04W 88/06	(2009.01)
H04L 29/08	(2006.01)
G06F 40/40	(2020.01)

(52) **U.S. Cl.**

CPC *H04L 51/36* (2013.01); *H04L 67/20* (2013.01); *H04W 88/06* (2013.01)

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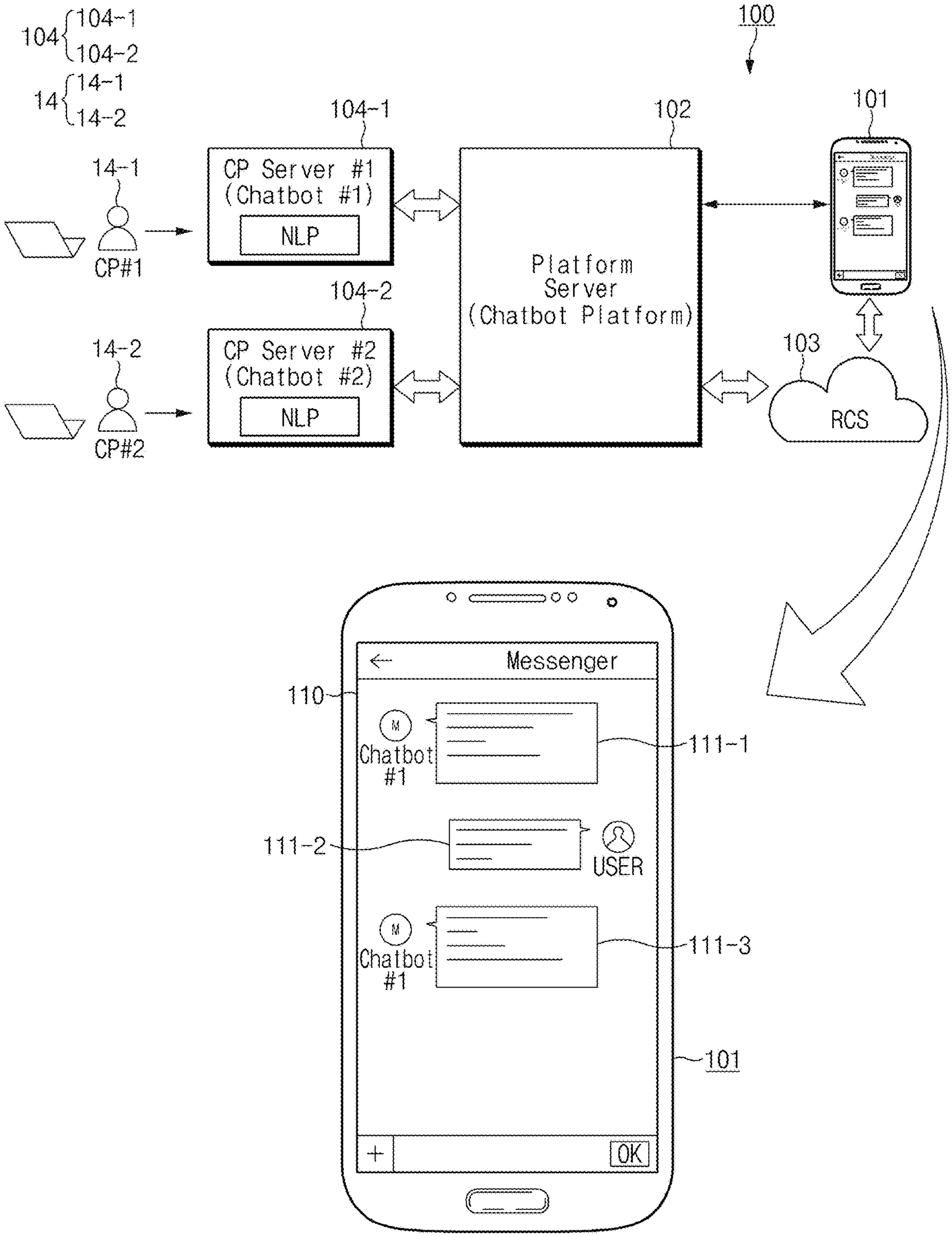
104
104-1
104-2
14
14-1
14-2
100
101
102
104-1
14-1
CP Server #1
(Chatbot #1)
NLP
CP#1
Platform
Server
(Chatbot Platform)
104-2
14-2
CP Server #2
(Chatbot #2)
NLP
CP#2
103
RCS
Messenger
110
Chatbot
#1
111-1
111-2
USER
111-3
101
+
OK

FIG. 1A

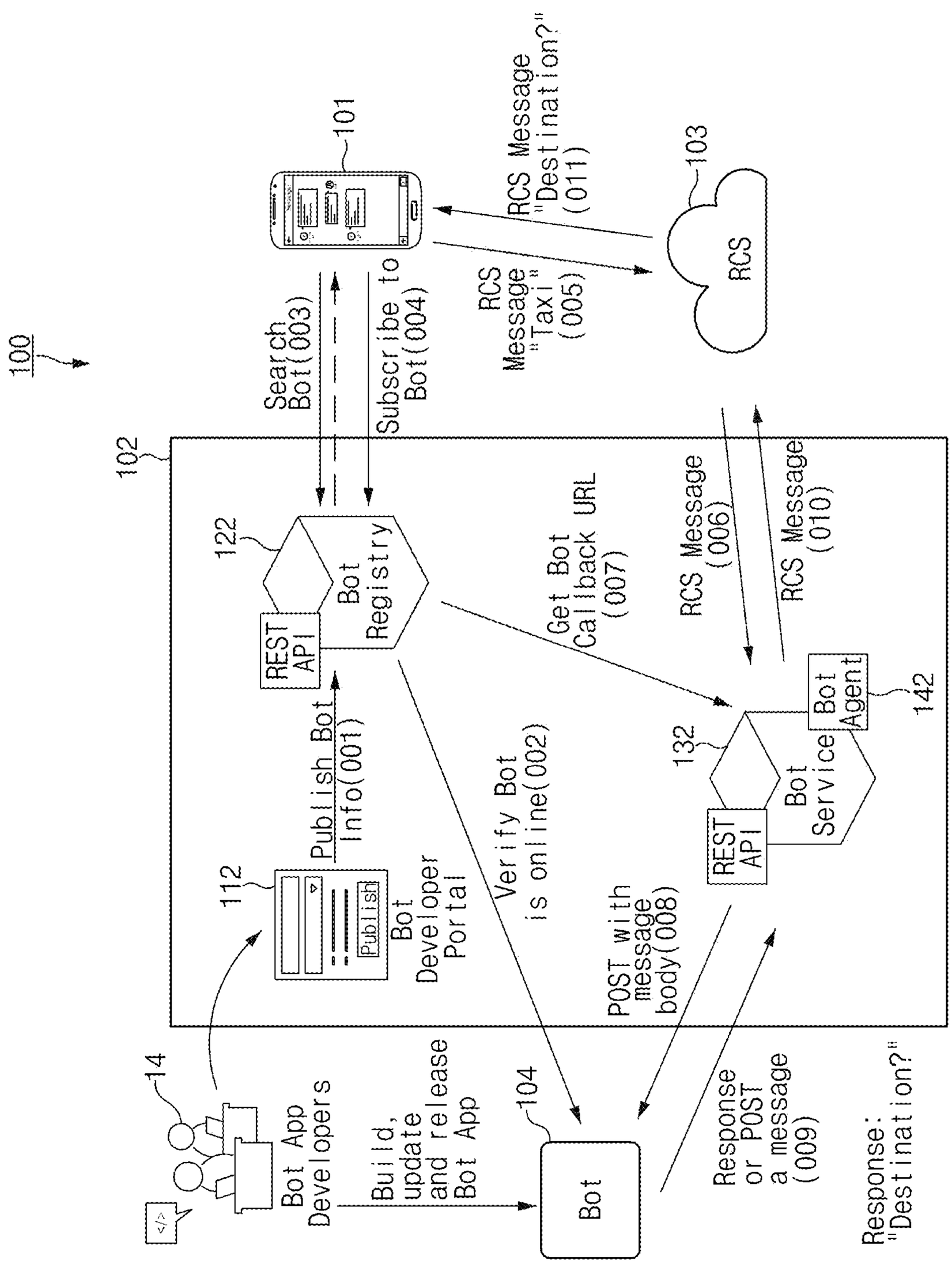
100
101
103
RCS
RCS Message "Destination?" (011)
RCS Message "Taxi" (005)
Search Bot(003)
Subscribe to Bot(004)
102
122
REST API
Bot Registry
Publish Bot Info(001)
Verify Bot is online(002)
Get Bot Callback URL (007)
RCS Message (006)
RCS Message (010)
132
Bot Service
Bot Agent
142
112
Bot Developer Portal
Publish
POST with message body(008)
14
Bot App Developers
Build, update and release Bot App
104
Bot
Response or POST a message (009)
Response: "Destination?"

FIG. 1B

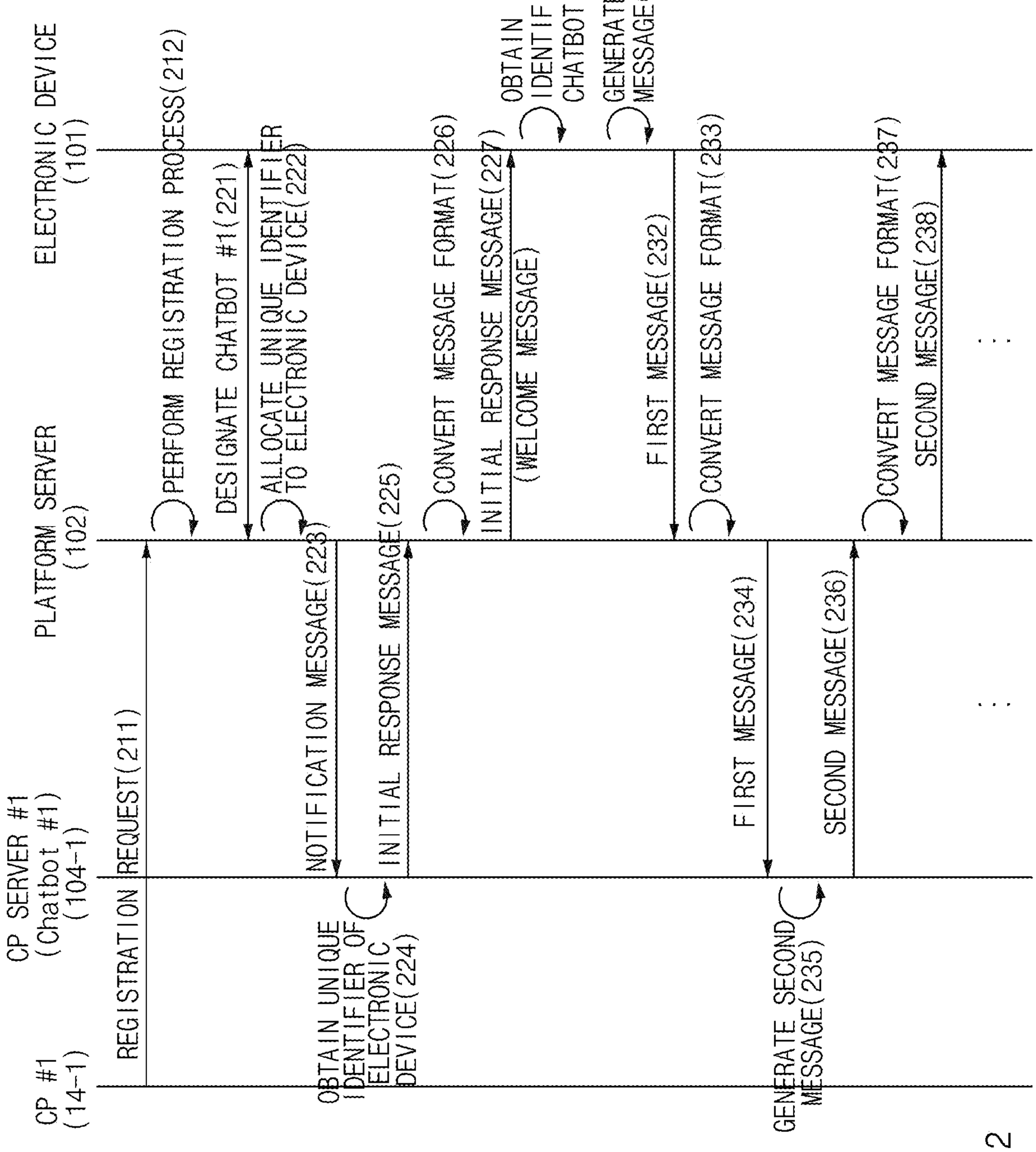
CP #1 (14-1)
CP SERVER #1 (Chatbot #1) (104-1)
PLATFORM SERVER (102)
ELECTRONIC DEVICE (101)
REGISTRATION REQUEST(211)
PERFORM REGISTRATION PROCESS(212)
DESIGNATE CHATBOT #1(221)
ALLOCATE UNIQUE IDENTIFIER TO ELECTRONIC DEVICE(222)
NOTIFICATION MESSAGE(223)
INITIAL RESPONSE MESSAGE(225)
CONVERT MESSAGE FORMAT(226)
INITIAL RESPONSE MESSAGE(227)
OBTAIN IDENTIFIER OF CHATBOT #1(228)
GENERATE FIRST MESSAGE(231)
(WELCOME MESSAGE)
FIRST MESSAGE(232)
CONVERT MESSAGE FORMAT(233)
FIRST MESSAGE(234)
SECOND MESSAGE(236)
CONVERT MESSAGE FORMAT(237)
SECOND MESSAGE(238)
OBTAIN UNIQUE IDENTIFIER OF ELECTRONIC DEVICE(224)
GENERATE SECOND MESSAGE(235)

FIG. 2

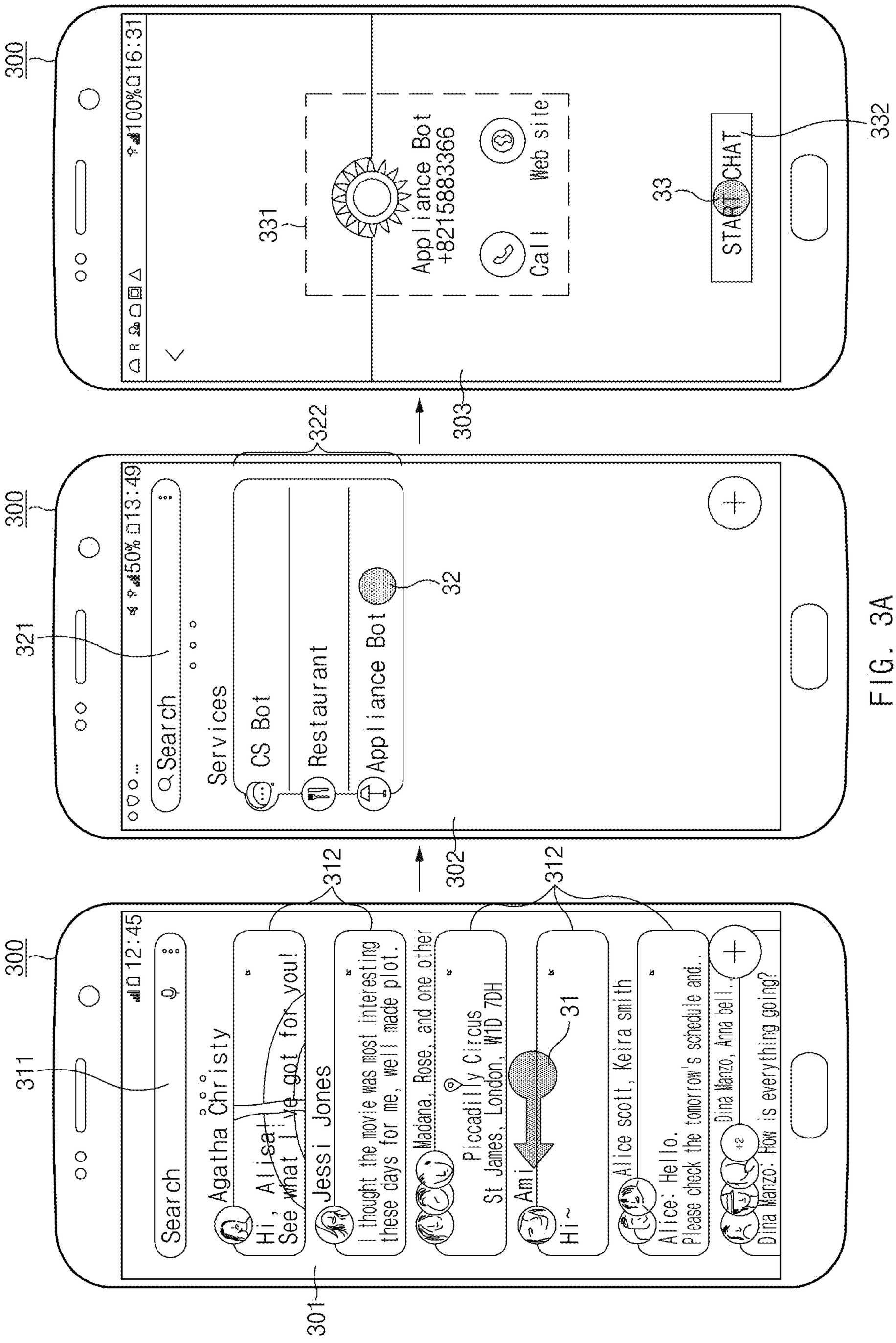
300
100% 16:31
331
Appliance Bot
+8215883366
Call
Web site
33
START CHAT
332
322
303
50% 13:49
321
Search
Services
CS Bot
Restaurant
Appliance Bot
32
312
302
12:45
311
Search
Agatha Christy
Hi, Alisa!
See what I've got for you!
Jessi Jones
I thought the movie was most interesting these days for me, well made plot.
Madana, Rose, and one other
Piccadilly Circus
St James, London, W1D 7DH
Ami
Hi~
31
Alice scott, Keira smith
Alice: Hello.
Please check the tomorrow's schedule and..
Dina Manzo, Anna bell..
+2
Dina Manzo: How is everything going?
301

FIG. 3A

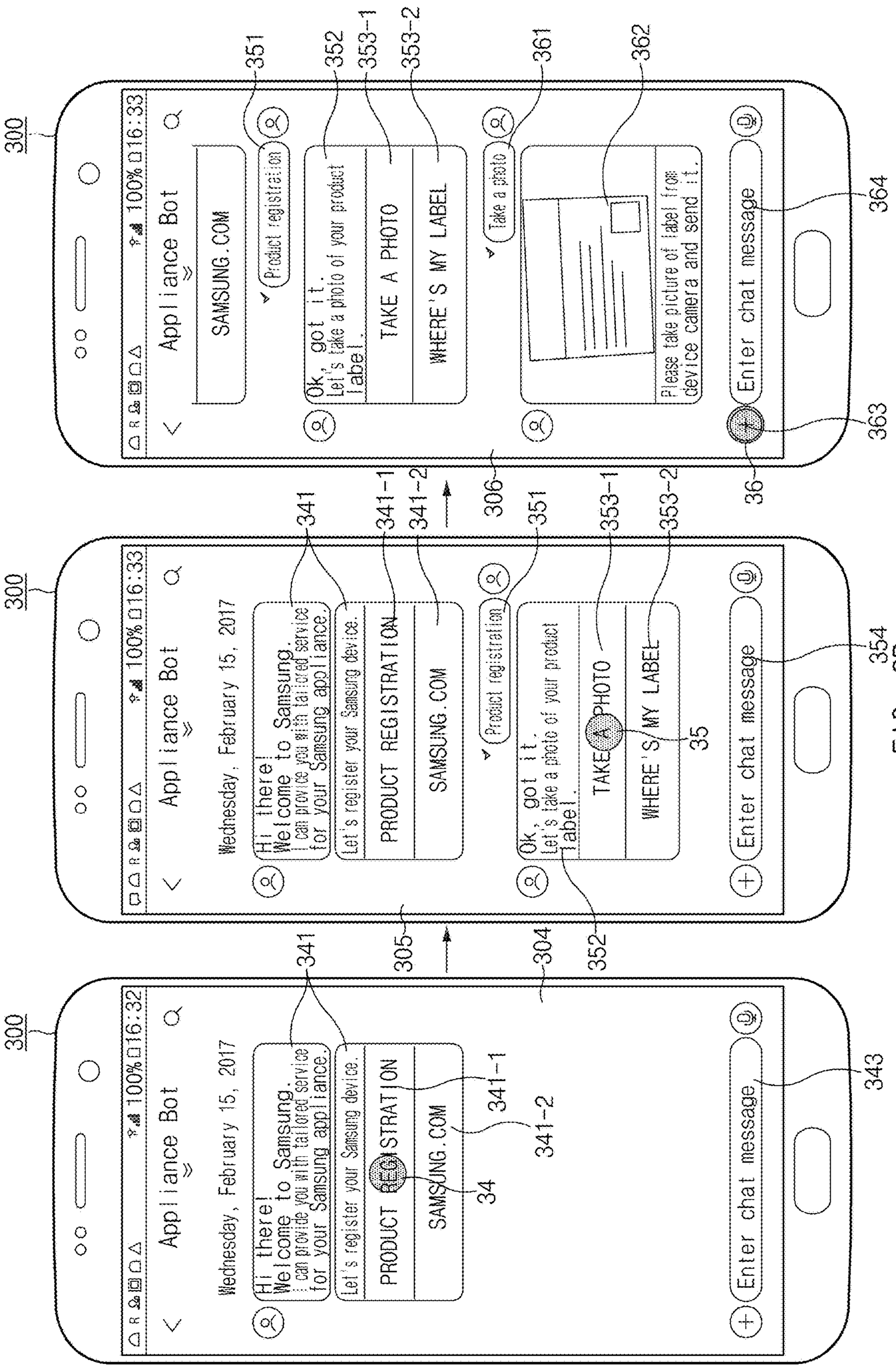
300
Appliance Bot
SAMSUNG.COM
Product registration
Ok, got it.
Let's take a photo of your product label.
TAKE A PHOTO
WHERE'S MY LABEL
Take a photo
Please take picture of label from device camera and send it.
Enter chat message
351
352
353-1
353-2
361
362
364
363
Wednesday, February 15, 2017
Hi there!
Welcome to Samsung.
I can provide you with tailored service for your Samsung appliance.
Let's register your Samsung device.
PRODUCT REGISTRATION
SAMSUNG.COM
341
341-1
341-2
306
354
35
304
305
34
343

FIG. 3B

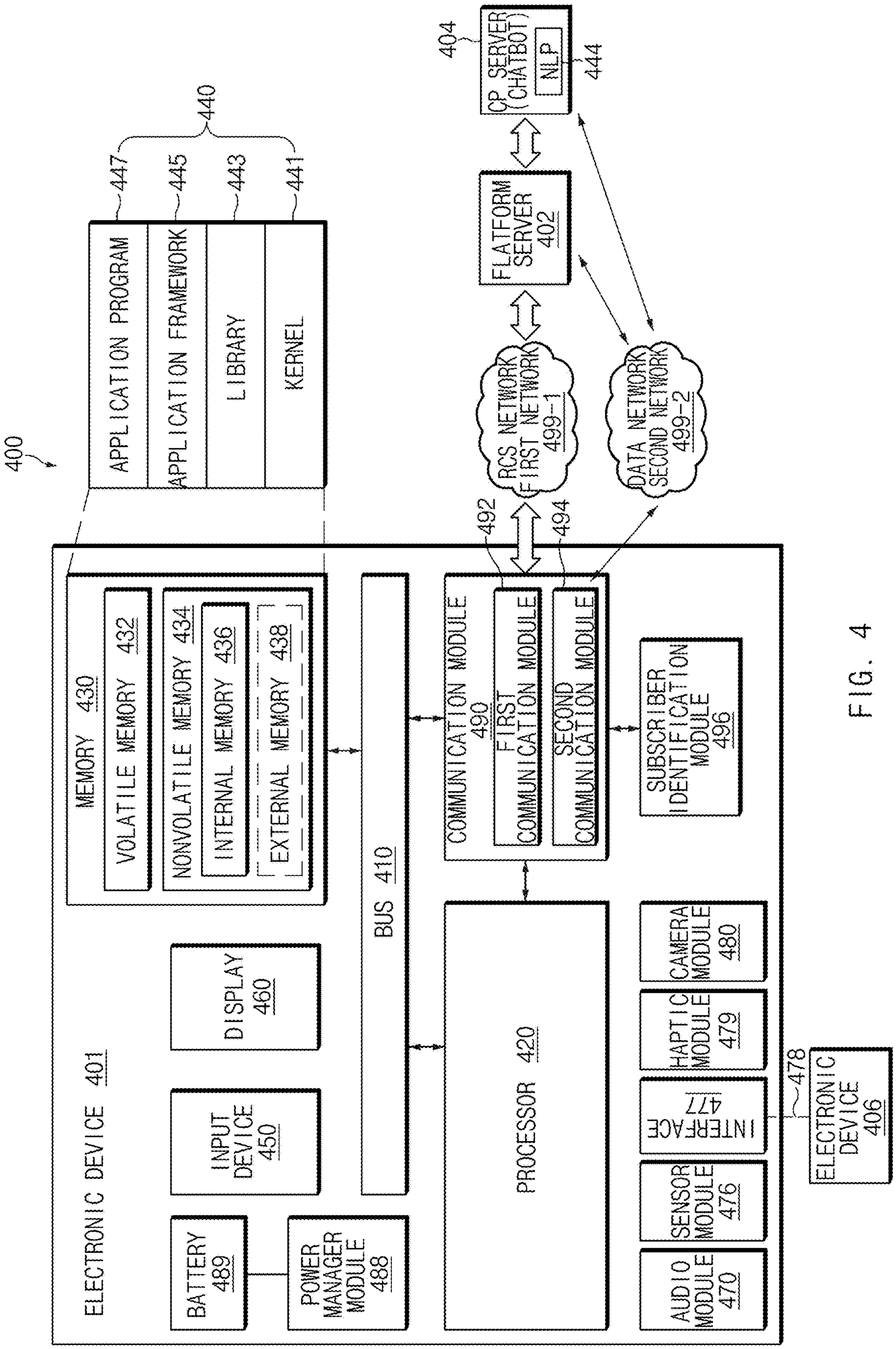
400
ELECTRONIC DEVICE 401
APPLICATION PROGRAM 440
447
445
443
441
APPLICATION FRAMEWORK
LIBRARY
KERNEL
MEMORY 430
VOLATILE MEMORY 432
NONVOLATILE MEMORY 434
INTERNAL MEMORY 436
EXTERNAL MEMORY 438
BUS 410
PROCESSOR 420
BATTERY 489
POWER MANAGER MODULE 488
INPUT DEVICE 450
DISPLAY 460
COMMUNICATION MODULE 490
FIRST COMMUNICATION MODULE
SECOND COMMUNICATION MODULE
492
494
SUBSCRIBER IDENTIFICATION MODULE 496
AUDIO MODULE 470
SENSOR MODULE 476
INTERFACE 477
HAPTIC MODULE 479
CAMERA MODULE 480
478
ELECTRONIC DEVICE 406
404
CP SERVER (CHATBOT)
NLP
444
FLATFORM SERVER 402
RCS NETWORK FIRST NETWORK 499-1
DATA NETWORK SECOND NETWORK 499-2

FIG. 4

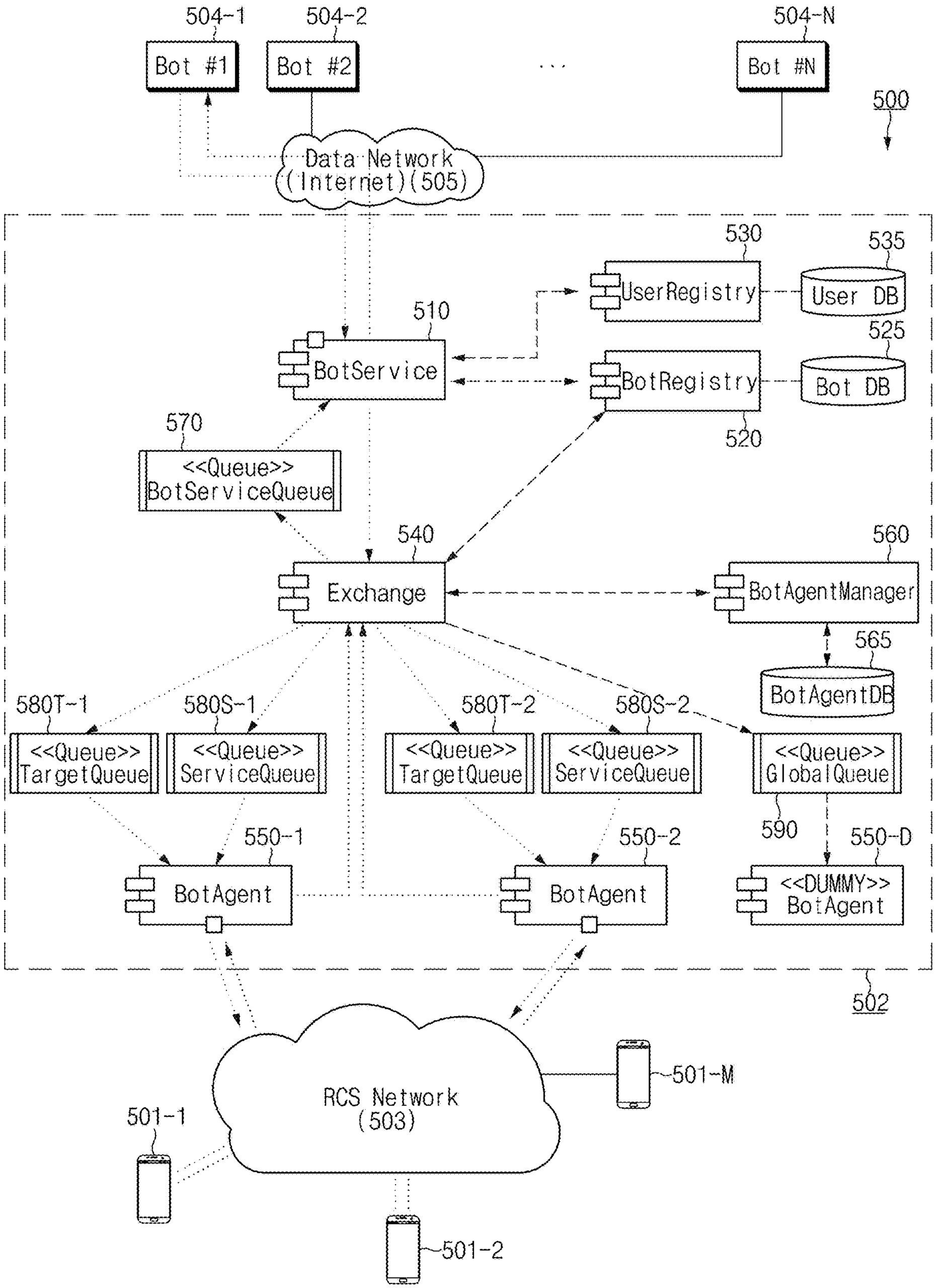
504-1
504-2
504-N
Bot #1
Bot #2
Bot #N
500
Data Network
(Internet)(505)
530
535
UserRegistry
User DB
510
525
BotService
BotRegistry
Bot DB
570
520
<<Queue>>
BotServiceQueue
540
560
Exchange
BotAgentManager
565
BotAgentDB
580T-1
580S-1
580T-2
580S-2
<<Queue>>
TargetQueue
<<Queue>>
ServiceQueue
<<Queue>>
TargetQueue
<<Queue>>
ServiceQueue
<<Queue>>
GlobalQueue
590
550-1
550-2
550-D
BotAgent
BotAgent
<<DUMMY>>
BotAgent
502
RCS Network
(503)
501-1
501-M
501-2

FIG. 5

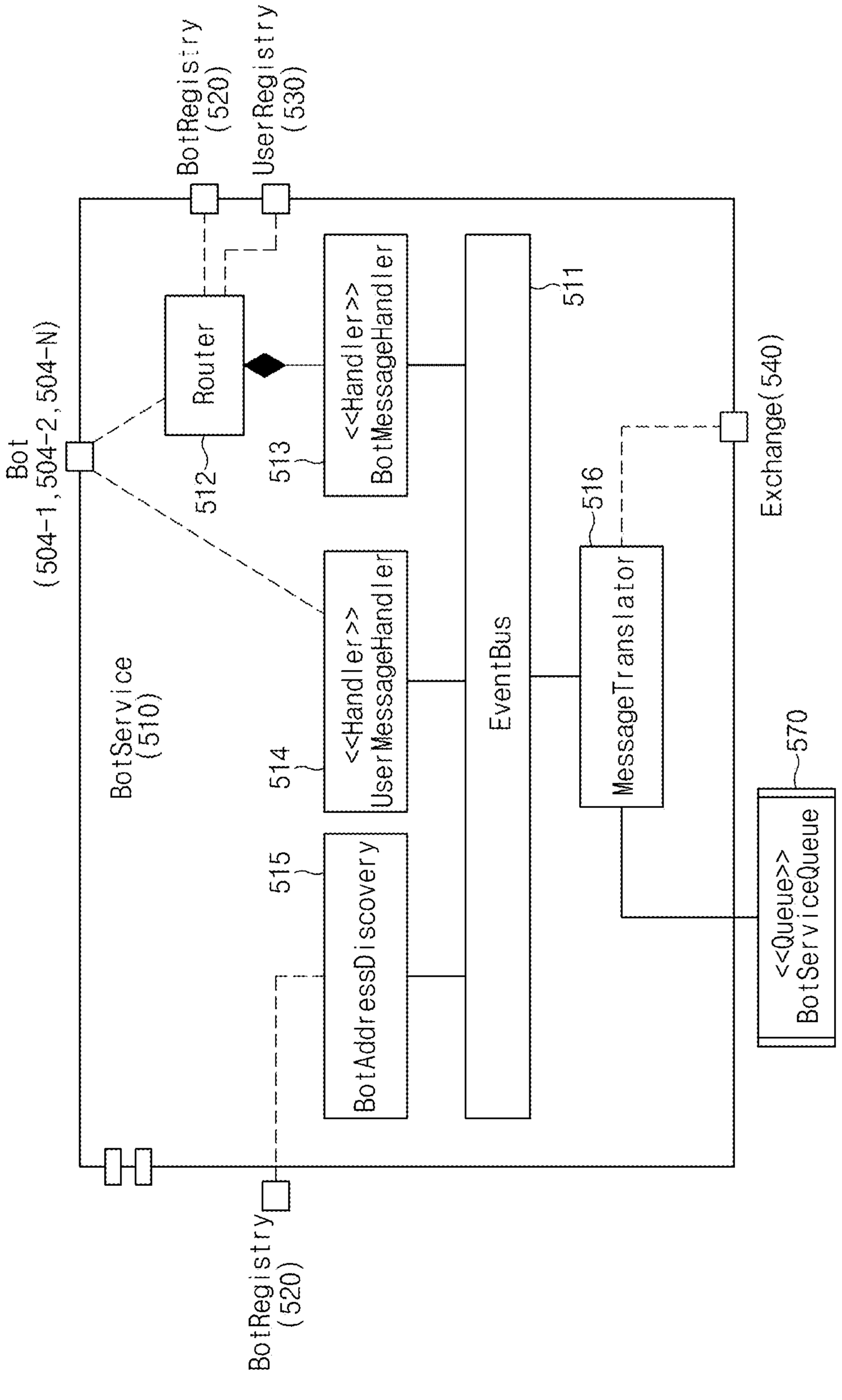
BotRegistry (520)
UserRegistry (530)
Bot (504-1, 504-2, 504-N)
BotService (510)
Router
512
513
<<Handler>> BotMessageHandler
514
<<Handler>> UserMessageHandler
515
BotAddressDiscovery
EventBus
511
516
MessageTranslator
Exchange(540)
570
<<Queue>> BotServiceQueue
BotRegistry (520)

FIG. 6A

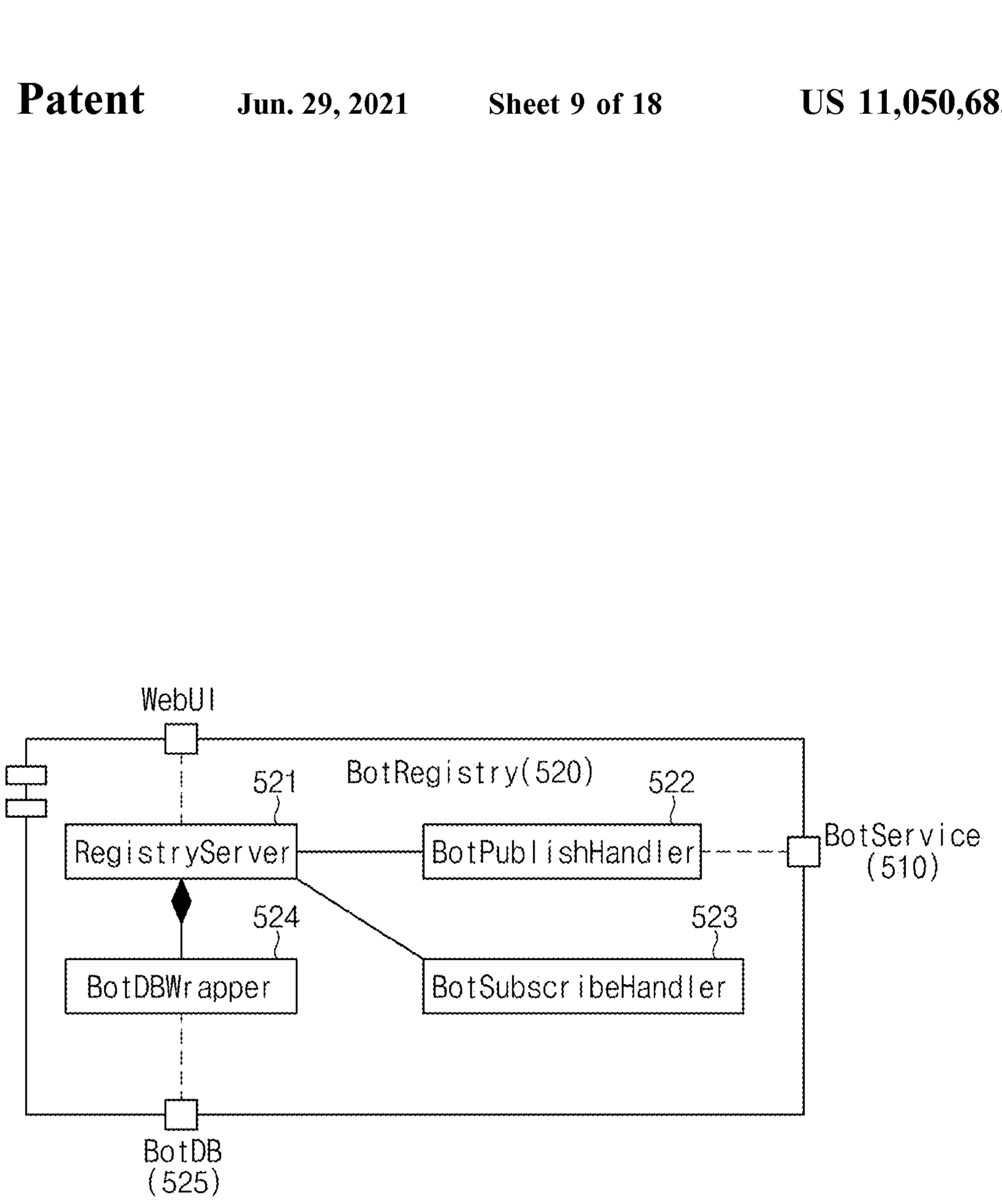
WebUI
BotRegistry(520)
521
522
RegistryServer
BotPublishHandler
BotService
(510)
524
523
BotDBWrapper
BotSubscribeHandler
BotDB
(525)

FIG. 6B

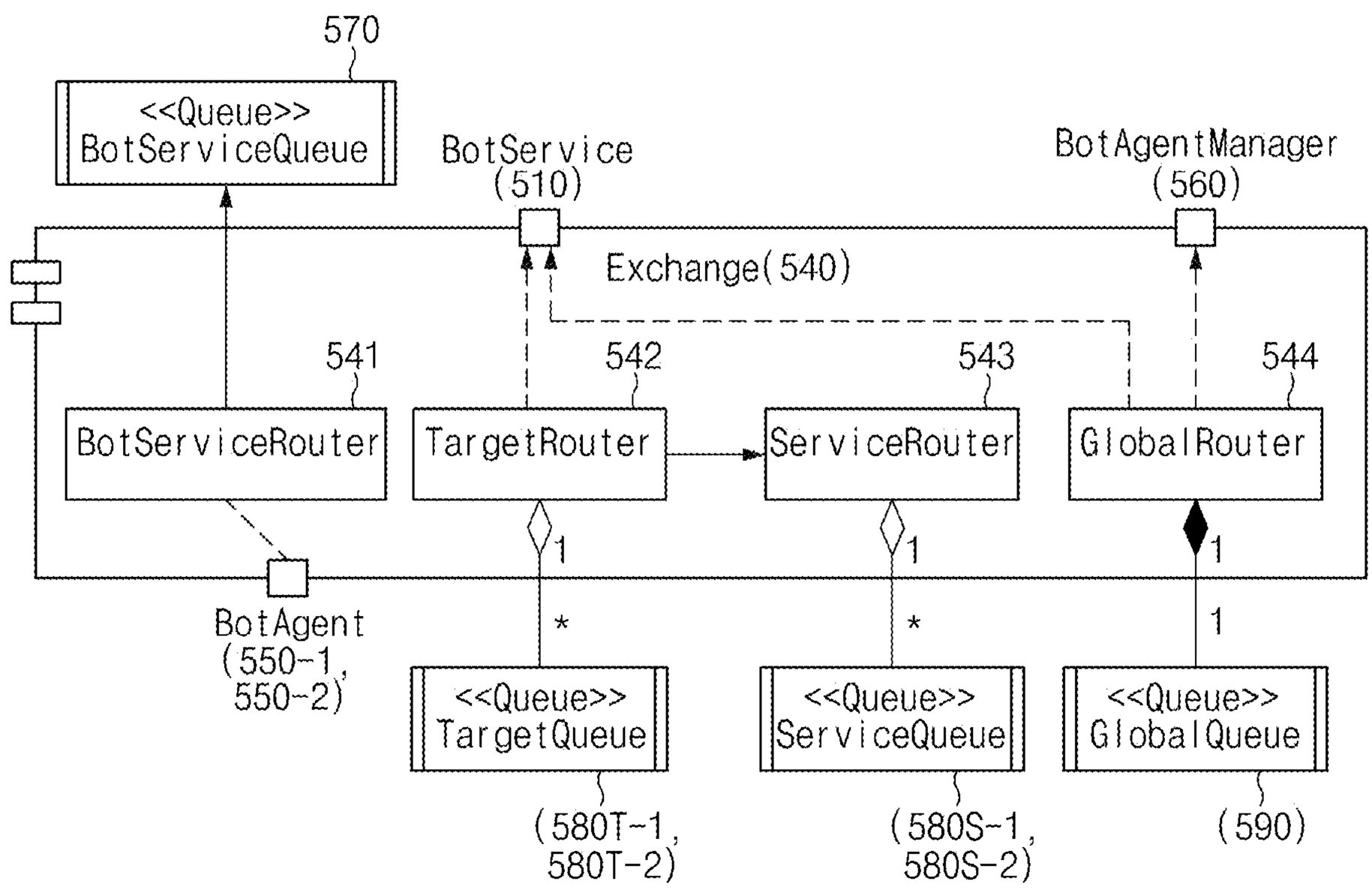
570
<<Queue>>
BotServiceQueue
BotService
(510)
BotAgentManager
(560)
Exchange(540)
541
542
543
544
BotServiceRouter
TargetRouter
ServiceRouter
GlobalRouter
1
1
1
BotAgent
(550-1,
550-2)
*
*
1
<<Queue>>
TargetQueue
<<Queue>>
ServiceQueue
<<Queue>>
GlobalQueue
(580T-1,
580T-2)
(580S-1,
580S-2)
(590)

FIG. 6C

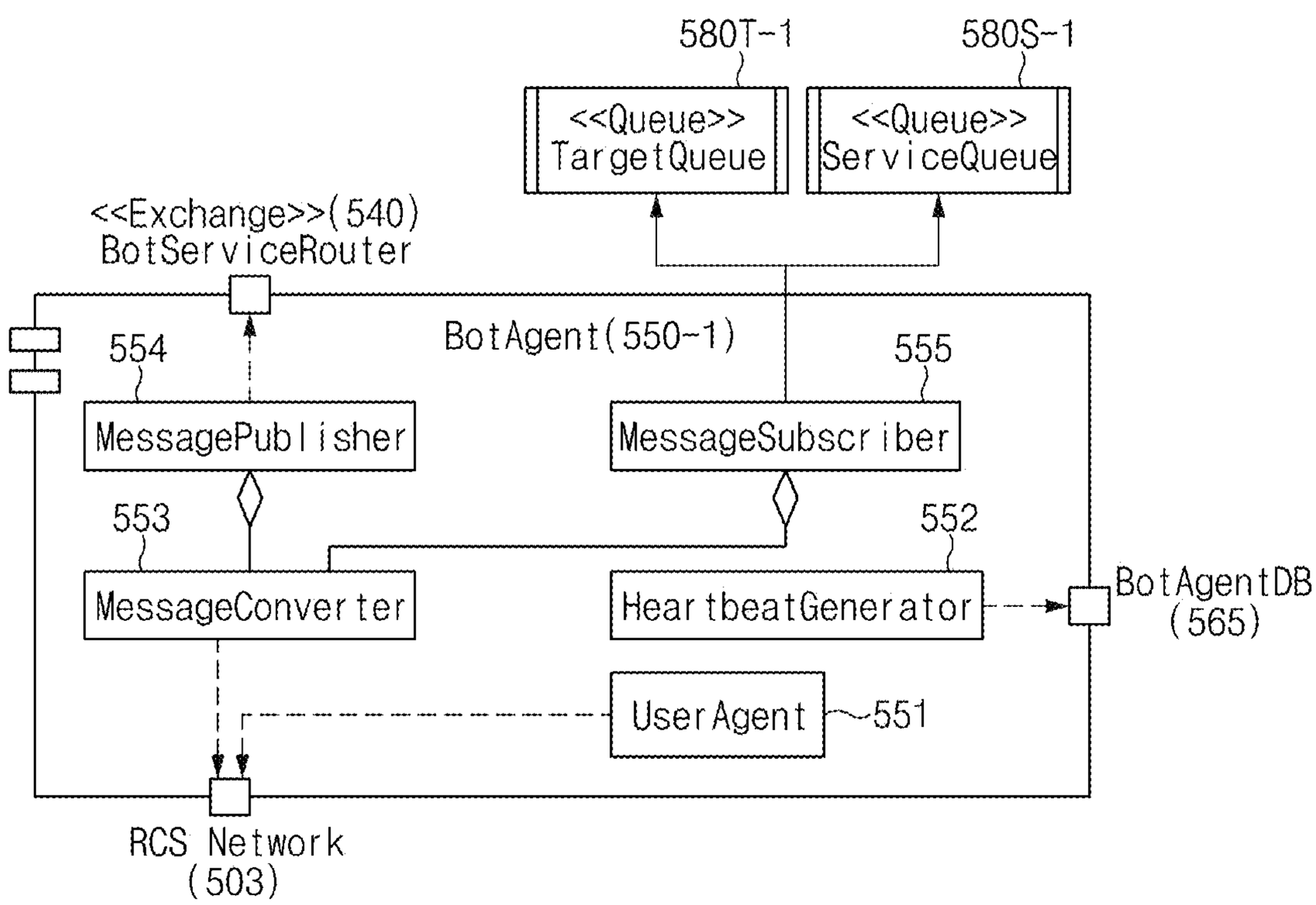
580T-1
580S-1
<<Queue>>
TargetQueue
<<Queue>>
ServiceQueue
<<Exchange>>(540)
BotServiceRouter
BotAgent(550-1)
554
555
MessagePublisher
MessageSubscriber
553
552
MessageConverter
HeartbeatGenerator
BotAgentDB
(565)
UserAgent
551
RCS Network
(503)

FIG. 6D

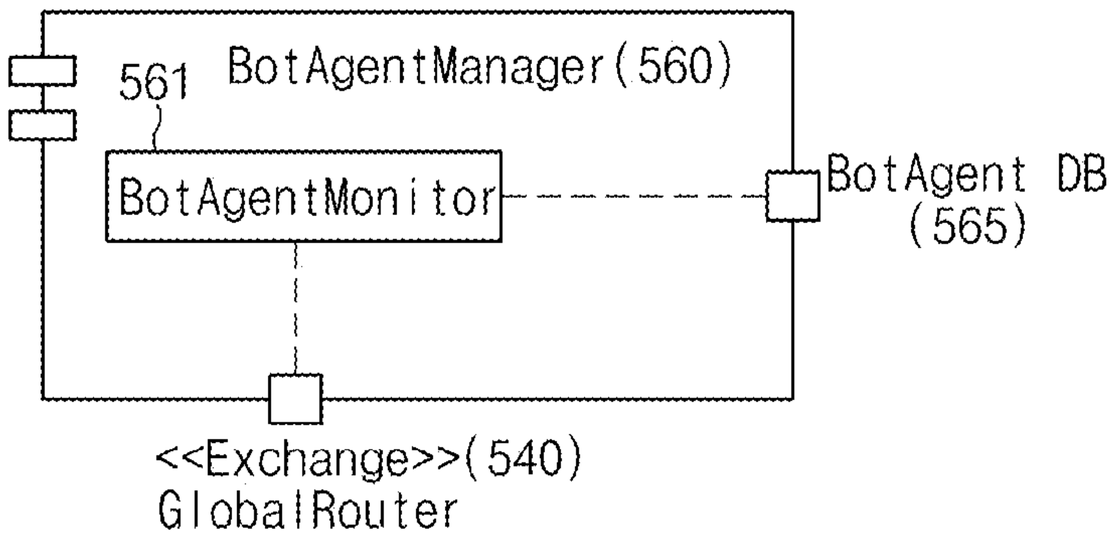
561
BotAgentManager(560)
BotAgentMonitor
BotAgent DB
(565)
<<Exchange>>(540)
GlobalRouter

FIG. 6E

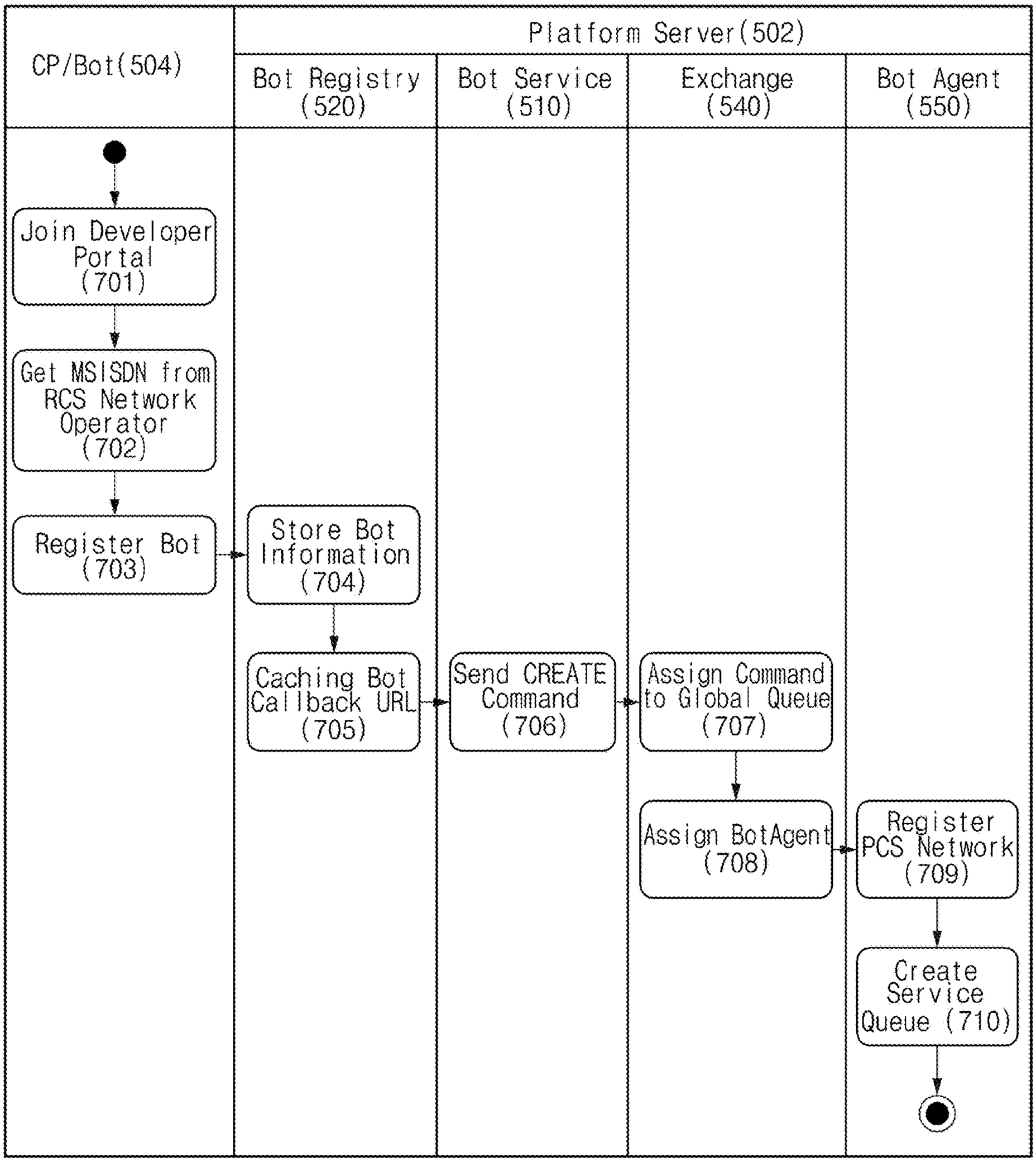
CP/Bot(504)
Platform Server(502)
Bot Registry (520)
Bot Service (510)
Exchange (540)
Bot Agent (550)
Join Developer Portal (701)
Get MSISDN from RCS Network Operator (702)
Register Bot (703)
Store Bot Information (704)
Caching Bot Callback URL (705)
Send CREATE Command (706)
Assign Command to Global Queue (707)
Assign BotAgent (708)
Register PCS Network (709)
Create Service Queue (710)

FIG. 7

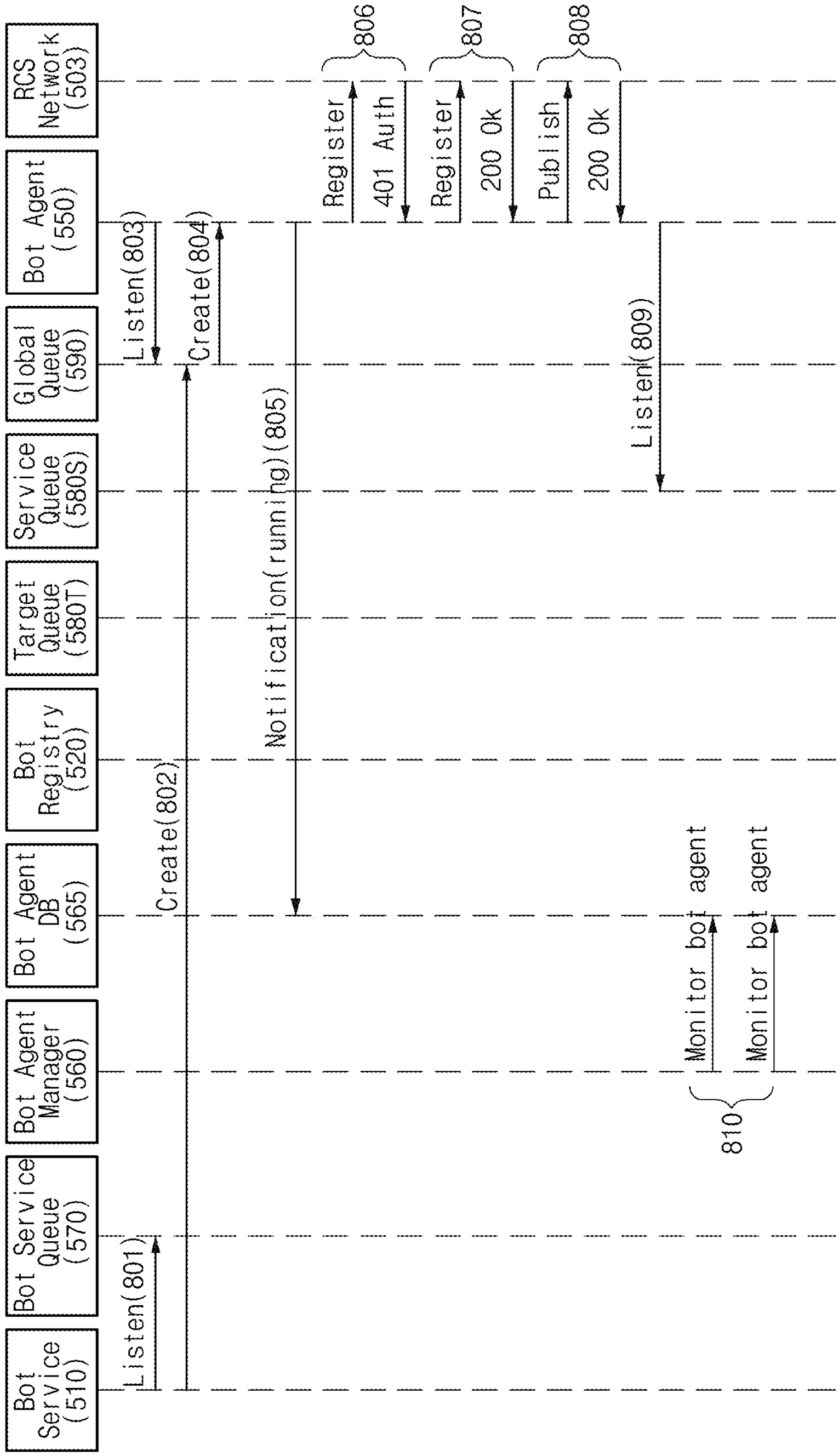
Bot Service (510)
Bot Service Queue (570)
Bot Agent Manager (560)
Bot Agent DB (565)
Bot Registry (520)
Target Queue (580T)
Service Queue (580S)
Global Queue (590)
Bot Agent (550)
RCS Network (503)
Listen(801)
Create(802)
Notification(running)(805)
Listen(809)
Monitor bot agent
Monitor bot agent
810
Listen(803)
Create(804)
Register
401 Auth
Register
200 Ok
Publish
200 Ok
806
807
808

FIG. 8

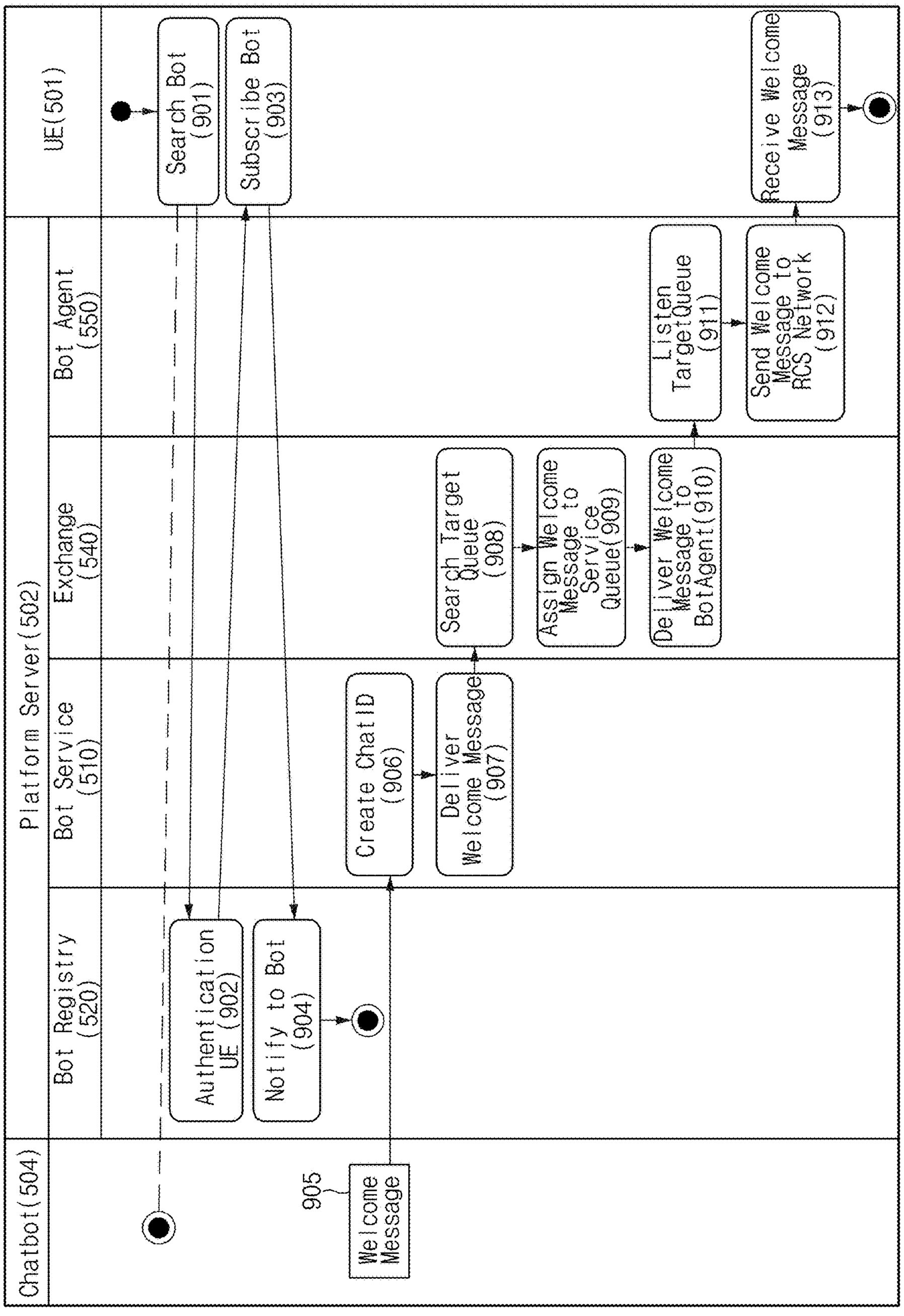
UE(501)
Bot Agent (550)
Search Bot (901)
Subscribe Bot (903)
Receive Welcome Message (913)
Listen TargetQueue (911)
Send Welcome Message to RCS Network (912)
Platform Server(502)
Bot Service (510)
Exchange (540)
Search Target Queue (908)
Assign Welcome Message to Service Queue(909)
Deliver Welcome Message to BotAgent(910)
Create ChatID (906)
Deliver Welcome Message (907)
Bot Registry (520)
Authentication UE (902)
Notify to Bot (904)
Chatbot(504)
905
Welcome Message

FIG. 9

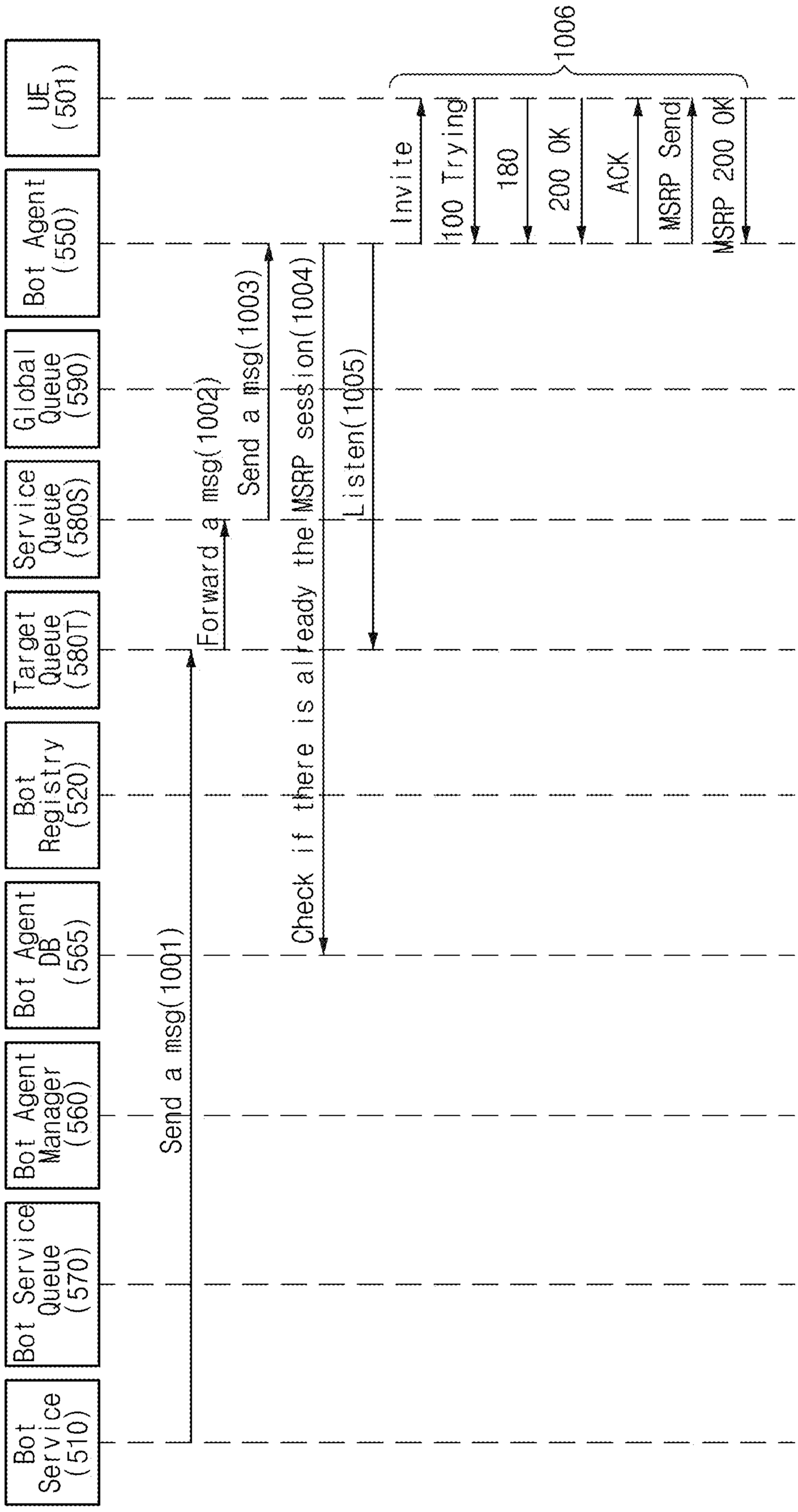
Bot Service (510)
Bot Service Queue (570)
Bot Agent Manager (560)
Bot Agent DB (565)
Bot Registry (520)
Target Queue (580T)
Service Queue (580S)
Global Queue (590)
Bot Agent (550)
UE (501)
Send a msg(1001)
Check if there is already the MSRP session(1003)
Forward a msg(1002)
Send a msg(1004)
Listen(1005)
Invite
100 Trying
180
200 OK
ACK
MSRP Send
MSRP 200 OK
1006

FIG. 10

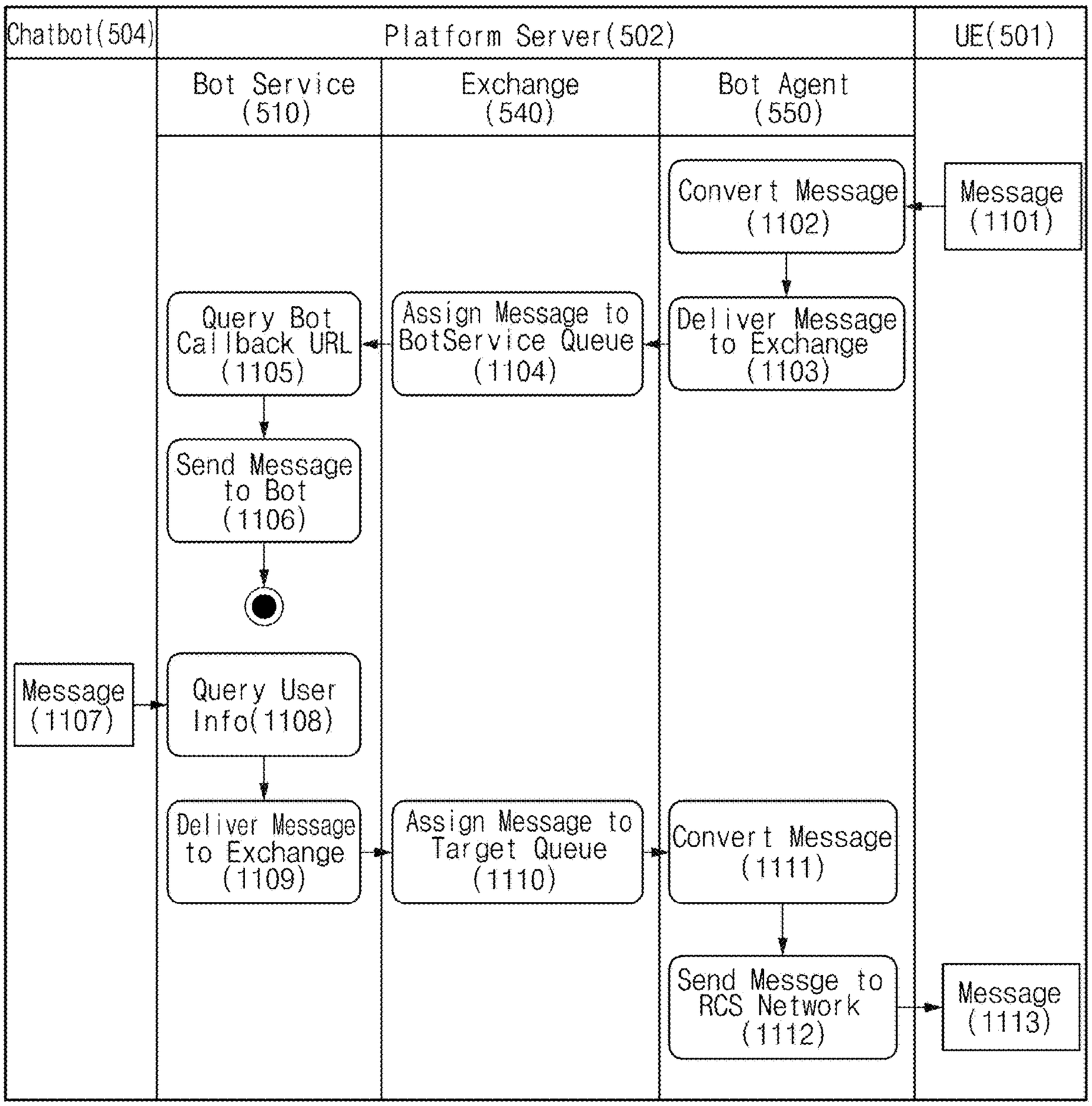
Chatbot(504)
Platform Server(502)
UE(501)
Bot Service (510)
Exchange (540)
Bot Agent (550)
Convert Message (1102)
Message (1101)
Deliver Message to Exchange (1103)
Assign Message to BotService Queue (1104)
Query Bot Callback URL (1105)
Send Message to Bot (1106)
Message (1107)
Query User Info(1108)
Deliver Message to Exchange (1109)
Assign Message to Target Queue (1110)
Convert Message (1111)
Send Messge to RCS Network (1112)
Message (1113)

FIG. 11

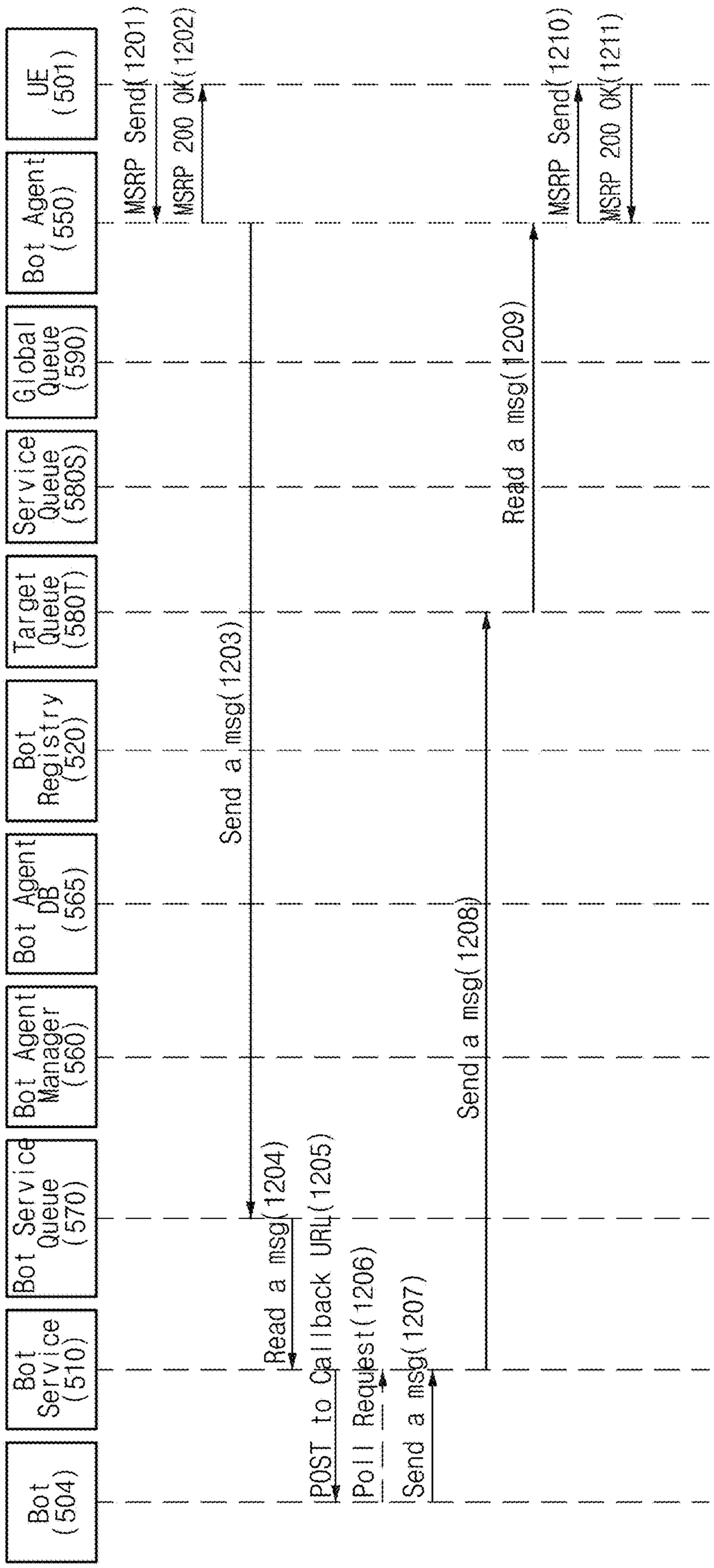
UE (501)
Bot Agent (550)
Global Queue (590)
Target Queue (580T)
Service Queue (580S)
Bot Agent DB (565)
Bot Registry (520)
Bot Service Queue (570)
Bot Agent Manager (560)
Bot Service (510)
Bot (504)
MSRP Send(1201)
MSRP 200 OK(1202)
Send a msg(1203)
Read a msg(1204)
POST to Callback URL(1205)
Poll Request(1206)
Send a msg(1207)
Send a msg(1208)
Read a msg(1209)
MSRP Send(1210)
MSRP 200 OK(1211)

FIG. 12

SYSTEM FOR PROVIDING DIALOG CONTENT

CROSS-REFERENCE TO RELATED APPLICATION(S) AND CLAIM OF PRIORITY

This application is based on and claims priority under 35 U.S.C. § 119 to Korean Patent Application No. 10-2017-0048452 filed on Apr. 14, 2017, in the Korean Intellectual Property Office, the disclosure of which is incorporated by reference herein its entirety.

TECHNICAL FIELD

The present disclosure relates to a system for providing dialog content, an electronic device, and a server.

BACKGROUND

Recently, with the development of mobile communication technology, electronic devices have been transformed into a form capable of being easily carried and being freely accessed by wired and wireless networks. For example, a portable electronic device, such as a smartphone and a tablet personal computer (PC), may support various functions, such as Internet access and multimedia playback, in addition to call and message transmission and reception functions.

A user of an electronic device should be able to transmit a search keyword to a search engine to receive content or a service he or she wants. In a search using the search keyword, it is inconvenient for the user to directly derive a proper search keyword for himself or herself.

To address such an inconvenience, a dialog content providing service based on natural language understanding has been made. The purpose of the dialog content providing service is to analyze a meaning of a natural language request of the user and provide proper content to the user in a dialog manner.

The above information is presented as background information only to assist with an understanding of the present disclosure. No determination has been made, and no assertion is made, as to whether any of the above might be applicable as prior art with regard to the present disclosure.

SUMMARY

A dialog content providing service may be implemented based on a messenger application which provides a dialog user interface (UI). Representative over the top (OTT) based messenger applications have been developed by many developers and serve users from all over the world.

Thus, it can be difficult for a single content provider (CP) to develop software to fit each of various messenger applications to implement its dialog content providing service. In addition, since customers capable of receiving the dialog content providing service may be limited to users who install a messenger application, there may be a limitation in customer scalability.

Embodiments according to the present disclosure address at least the above-mentioned problems and/or disadvantages and provide at least the advantages described below. Accordingly, embodiments according to the present disclosure provide a system for providing dialog content to provide a single platform for a dialog content providing service, allow CP servers to depend on the platform, and communicate with an electronic device of a user over a network (e.g., a rich communication suite (RCS) network) with high scalability.

In accordance with embodiments of the present disclosure, an electronic device is provided. The electronic device may include a housing, a display configured to be exposed through one surface of the housing, a communication module configured to communicate over a first network compliant with a first protocol or a second network compliant with a second protocol, a processor configured to be electrically connected with the display and the communication module, and a memory configured to be electrically connected with the processor and store a specified application The memory may store instructions, when executed, causing the processor to execute the specified application, designate a content provider (CP) server by interacting with a platform server over the second network, receive an initial response message generated by the designated CP server over the first network, and verify a first identifier of the designated CP server based on the first protocol from a source of the initial response message.

In accordance with other embodiments of the present disclosure, a server is provided. The server may include a communication module configured to communicate with an electronic device over a first network compliant with a first protocol and communicate with a content provider (CP) server over a second network compliant with a second protocol, a processor configured with be electrically connected with the communication module, and a memory configured to be electrically connected with the processor and store a first correspondence relationship between a first identifier of the CP server based on the first protocol and a second identifier of the CP server based on the second protocol. The memory may store instructions, when executed, causing the processor to receive a first message formatted under the first protocol and destined to the first identifier of the CP server, from the electronic device over the first network, convert the first message to be formatted under the second protocol, change a destination of the converted first message to a second identifier of the CP server using the first correspondence relationship stored in the memory, and transmit the converted first message to the CP server indicated by the second identifier, over the second network.

In accordance with certain embodiments of the present disclosure, a server is provided. The server may include a communication module configured with communicate with an electronic device over a first network compliant with a first protocol and communicate with a CP server over a second network compliant with a second protocol, a processor configured with be electronically connected with the communication module, and a memory configured to be electrically connected with the processor and store a second correspondence relationship between an identifier of the electronic device based on the first protocol and a unique identifier allocated to the electronic device The memory may store instructions, when executed, causing the processor to receive a second message formatted under the second protocol and destined to the unique identifier allocated to the electronic device, from the CP server over the second network, convert the second message to be formatted under the first protocol, change a destination of the converted second message to the identifier of the electronic device based on the first protocol using the second correspondence relationship stored in the memory, and transmit the converted second message to the electronic device indicated by the identifier of the electronic device based on the first protocol, over the first network.

According to various embodiments disclosed in the present disclosure, message transmission and reception between

a chatbot and an electronic device may be performed over an RCS network. A system according to various embodiments of the present disclosure may provide a more enhanced chatbot service due to enhanced scalability, accessibility, and compatibility of the RCS network. In addition, various effects directly or indirectly ascertained through the present disclosure may be provided.

Other aspects, advantages, and salient features of the disclosure will become apparent to those skilled in the art from the following detailed description, which, taken in conjunction with the annexed drawings, discloses various embodiments of the present disclosure.

BRIEF DESCRIPTION OF THE DRAWINGS

The above and other aspects, features, and advantages of certain embodiments of the present disclosure will be more apparent from the following description taken in conjunction with the accompanying drawings, in which:

FIGS. **1**A and **1**B illustrate a system for providing dialog content according to various embodiments;

FIG. **2** illustrate operations of a method for providing dialog content according to some embodiments;

FIGS. **3**A and **3**B illustrate a graphic user interface (GUI) of an electronic device according to certain embodiments;

FIG. **4** illustrates, in block diagram format, a configuration of an electronic device in a system according to some embodiments of the present disclosure;

FIG. **5** illustrates, in block diagram format, a platform server according to some embodiments;

FIG. **6**A illustrates a BotService module according to certain embodiments;

FIG. **6**B illustrates a BotRegistry according to some embodiments;

FIG. **6**C illustrates an Exchange according to some embodiments;

FIG. **6**D illustrates a BotAgent according to certain embodiments;

FIG. **6**E illustrates a BotAgentManager according to some embodiments;

FIG. **7** illustrates operations of a method for registering a chat bot with a platform server according to some embodiments;

FIG. **8** illustrates operations of a platform server when registering a chatbot according to certain embodiments;

FIG. **9** illustrates operations of a method for subscribing to a chatbot according to some embodiments;

FIG. **10** illustrates operations of a platform server when subscribing to a chatbot according to some embodiments;

FIG. **11** illustrates operations a chat method according to certain embodiments; and

FIG. **12** illustrates operations of a platform server when chatting with a chatbot according to various embodiments.

DETAILED DESCRIPTION

FIGS. **1**A through **12**, discussed below, and the various embodiments used to describe the principles of the present disclosure in this patent document are by way of illustration only and should not be construed in any way to limit the scope of the disclosure. Those skilled in the art will understand that the principles of the present disclosure may be implemented in any suitably arranged system or device.

Hereinafter, various embodiments of the present disclosure may be described with reference to accompanying drawings. Accordingly, those of ordinary skill in the art will recognize that modification, equivalent, and/or alternative on the various embodiments described herein can be variously made without departing from the scope and spirit of the present disclosure. With regard to description of drawings, similar elements may be marked by similar reference numerals.

An electronic device according to various embodiments of this disclosure may include various forms of devices. For example, the electronic device may include at least one of, for example, portable communication devices (e.g., smartphones), computer devices (e.g., personal digital assistants (PDAs), tablet personal computers (PCs), laptop PCs, desktop PCs, workstations, or servers), portable multimedia devices (e.g., electronic book readers or Motion Picture Experts Group (MPEG-1 or MPEG-2) Audio Layer 3 (MP3) players), portable medical devices (e.g., heartbeat measuring devices, blood glucose monitoring devices, blood pressure measuring devices, and body temperature measuring devices), cameras, or wearable devices. The wearable device may include at least one of an accessory type (e.g., watches, rings, bracelets, anklets, necklaces, glasses, contact lens, or head-mounted-devices (HMDs)), a fabric or garment-integrated type (e.g., an electronic apparel), a body-attached type (e.g., a skin pad or tattoos), or a bio-implantable type (e.g., an implantable circuit). According to various embodiments, the electronic device may include at least one of, for example, televisions (TVs), digital versatile disk (DVD) players, audios, audio accessory devices (e.g., speakers, headphones, or headsets), refrigerators, air conditioners, cleaners, ovens, microwave ovens, washing machines, air cleaners, set-top boxes, home automation control panels, security control panels, game consoles, electronic dictionaries, electronic keys, camcorders, or electronic picture frames.

In certain embodiments, the electronic device may include at least one of navigation devices, satellite navigation system (e.g., Global Navigation Satellite System (GNSS)), event data recorders (EDRs) (e.g., black box for a car, a ship, or a plane), vehicle infotainment devices (e.g., head-up display for vehicle), industrial or home robots, drones, automatic teller's machines (ATMs), points of sales (POSs), measuring instruments (e.g., water meters, electricity meters, or gas meters), or internet of things (e.g., light bulbs, sprinkler devices, fire alarms, thermostats, or street lamps). The electronic device according to some embodiments of this disclosure may not be limited to the above-described devices, and may provide functions of a plurality of devices like smartphones which has measurement function of personal biometric information (e.g., heart rate or blood glucose). In this disclosure, the term "user" may refer to a person who uses an electronic device or may refer to a device (e.g., an artificial intelligence electronic device) that uses the electronic device.

FIG. **1**A illustrates a system for providing dialog content according to certain embodiments.

Referring to the non-limiting example of FIG. **1**A, a system **100** for providing dialog content according to various embodiments may include an electronic device **101**, a platform server **102**, CP servers **104-1** and **104-2** (collectively called "**104**"). Although not illustrated, the electronic device **101**, the platform server **102**, and the CP servers **104-1** and **104-2** may be connected over, for example, a data network (an example of a second network) (e.g., an Internet protocol (IP) network or the Internet).

The electronic device **101** may include, but is not limited to, at least one of a portable communication device (e.g., a smartphone), a computer device (e.g., a personal digital assistant (PDA), a tablet personal computer (PC), a laptop

PC, or a desktop PC), a portable multimedia device (e.g., an electronic book (e-book) reader or an MEPG-1 audio layer 3 (MP3) player), or a wearable device.

According to some embodiments, the electronic device **101** may access the platform server **102** over a data network (e.g., an IP network or the Internet). The electronic device **101** may access a webpage (a chatbot store webpage) operated by the platform server **102** through a browser or may execute a dedicated application (a chatbot store application). A user may search the CP server **104** which provides a service he or she wants through the webpage or the dedicated application and may subscribe to the found CP server **104**.

According to certain embodiments, the electronic device **101** may communicate with the platform server **102** over a rich communication suite (RCS) network **103** and may transmit and receive a message with one of CP servers **104-1** and **104-2** through the medium of the platform server **102**. For example, the electronic device **101** may subscribe to the first CP server **104-1**. A chat thread provided from a native messenger application may be initiated between the electronic device **101** and the first CP server **104-1** by the subscription. When the chat thread is initiated, the electronic device **101** and the first CP server **104-1** may transmit and receive messages **111-1**, **111-2**, and **111-3** with each other through a graphic user interface (GUI) **110** (e.g., a chat room) provided from the native messenger application. For example, the messages **111-1** and **111-3** generated by the first CP server **104-1** may be transmitted to the electronic device **101** over the RCS network **103**. The message **111-2** generated by the electronic device **101** may be transmitted to the platform server **102** over the RCS network **103** to be converted in a specified manner and may then be transmitted to the first CP server **104-1**.

The platform server **102** may play a role as a platform of the CP servers **104-1** and **104-2** and may serve as a medium between the CP servers **104-1** and **104-2** and the electronic device **101**. For example, the platform server **102** may allow the electronic device **101** to search the CP servers **104-1** and **104-2** or may support to transmit and receive a message between the CP servers **104-1** and **104-2** and the electronic device **101**.

According to various embodiments, the platform server **102** may communicate with the CP servers **104-1** and **104-2** over a data network and may communicate with the electronic device **101** over the RCS network **103**. Thus, a message generated by each of the CP servers **104-1** and **104-2** should be converted into a message format based on the RCS network **103** by the platform server **102** to be transmitted to the electronic device **101**. On the other hand, a message based on the RCS network **103**, generated by the electronic device **101**, should be converted into a message format based on the data network by the platform server **102** to be transmitted to the CP servers **104-1** and **104-2**.

The RCS network **103** may be compliant with RCS (e.g., an example of a first protocol) which is an international standard protocol of a next-generation unified messaging service. RCS is an international standard protocol of the next-generation unified messaging service adopted by the global system for mobile communication association (GSMA) and may provide various features (e.g., a group chat, a file transfer, a state check of a recipient, a check of a message transmission state, or the like) which are not provided by a conventional messaging service (e.g., a short message service/multimedia message service (SMS/MMS)).

According to some embodiments, the RCS network **103** may be operated by a mobile network operator (MNO) and may specify subscribers (e.g., the electronic device **101** and the CP servers **104-1** and **104-2**) based on a "phone number (e.g., a mobile station international subscriber directory number (MSISDN))".

A messaging service application program (hereinafter referred to as "messaging service application") using the RCS network **103** may be implemented as a native application, contrary to an OTT-based messaging service application (e.g., Facebook Messenger™, Line™ KAKAOTALK™, WHAT'S APP™, or the like). Thus, the user does not need to additionally download or install a separate messaging service application to use the RCS network **103**. A messaging service application may be provided from the electronic device **101**. Further, when the messaging service application using the RCS network **103** uses a "phone number" to specify a subscriber, the user does not need to sign up or sign in (or log in).

The CP servers **104-1** and **104-2** (collectively referred to as "**104**") may be respectively developed by, for example, CPs **14-1** and **14-2** (collectively referred to as "**14**"). The CP server **104** may provide an initial response message (e.g., a "welcome message") or a message associated with a service provided from the CP server **104** to the electronic device **101** through the platform server **102** and the RCS network **103**.

According to certain embodiments, the CP server **104** may include a natural language processing (NLP) module (or a natural language understanding (NLU) module) which supports machine learning or artificial intelligence. The NLP module may derive a meaning or context of a natural language included in a message received from the electronic device **101** and may automatically generate a message corresponding to the meaning or context. In the present disclosure, the CP server **104** including the NLP module may be referred to as a chatbot or may be simply referred to as a bot.

FIG. **1**B illustrates a system for providing dialog content according to various embodiments.

Referring to FIG. **1**B, a system **100** for providing dialog content according to some embodiments may include an electronic device **101**, a platform server **102**, and a chatbot **104**. Although not illustrated, the electronic device **101**, the platform server **102**, and the chatbot **104** may be connected over, for example, a data network (an example of a second network) (e.g., an IP network or the Internet).

According to certain embodiments, a developer **14** may build, update, and release the chatbot **104**. The developer **14** may access, for example, a developer portal webpage **112** of a chatbot store or the like and may register the chatbot **104**.

In operation **001**, the developer **14** may register information of the chatbot **104**. For example, the developer **14** may access a developer portable webpage **112** of a "chatbot store" or the like and may register information such as a name, an icon, a description, and a uniform resource indicator (URI) of the chatbot **104**.

According to various embodiments, in operation **001**, the platform server **102** may generate an access token and may transmit the generated access token to the developer **14** and/or may receive a self-signed certificate from the developer **14**. The token and the certificate may be used later to enhance security of a message transmitted and received between the platform server **102** and the chatbot **104**.

In operation **002**, the platform server **102** may verify the validity of the chatbot **104**. For example, a BotRegistry **122** of the platform server **102** may verify whether the chatbot **104** is online to certify a registered URI.

In operation **003**, the electronic device **101** may access a "chatbot store" operated by the platform server **102** through

a specified application and may view chatbots registered with the BotRegistry **122** of the platform server **102**. For example, the electronic device **101** may receive a list of chatbots registered with the BotRegistry **122** or may search or designate a chatbot which provides a service a user wants.

According to various embodiments, a format of a request message transmitted to the BotRegistry **122** of the platform server **102** by the electronic device **101** to search the chatbot **104** may include a header and a body. For example, the header and the body may be described like Tables 1 and 2 below, respectively.

TABLE 1

Field	Type	Description
Content-Type	String	Content type of the request body: application/json

TABLE 2

Field	Type	Description
searchQuery optional	String	A search query for published bots.
pageNumber optional	String	A page index of search request. It begins with 1.
pageSize optional	String	A number of bot search result entry within single request.

Further, a message including the result of searching the chatbot, provided to the electronic device **101** by the BotRegistry **122** of the platform server **102**, may have a message format like Table 3 below. In Table 3, a list (botInfoList) of the found chatbots may include chatbot information (BotInfo) having a data format like Table 4 below.

TABLE 3

Field	Type	Description
botInfoList	BotInfo[ ]	A list of bot search result.
searchTotalCount	int	Total number of the result.

TABLE 4

Field	Type	Description
appId optional	string	appId(BotId) value generated when the Bot was created in Bot Registry
name optional	string	A name of a Bot.
publisher optional	string	A publisher of a Bot.
msisdn optional	string	MSISDN of a Bot.
mno optional	string	Mobile Network Provider of a Bot.
iconUrl optional	string	A URL to a bot icon.
brief optional	string	A brief description of a Bot.
description optional	string	A detailed description of a Bot.

In operation **004**, the electronic device **101** may obtain an RCS identifier of the chatbot **104** and may subscribe to the chatbot **104** based on the RCS identifier. In this case, the chatbot **104** may obtain user information of the electronic device **101** via the platform server **102**.

According to some embodiments, a message transmitted to the BotRegistry **122** of the platform server **102** by the electronic device **101** to subscribe to the chatbot **104** may be formatted to include a header and a body. For example, the header and the body may be described as shown in Tables 5 and 6 below.

TABLE 5

Field	Type	Description
Content-Type	String	Content type of the request body: application/json

TABLE 6

Field	Type	Description
appId optional	String	appId(BotId) value generated when the Bot was created in Bot Registry
subscriberMsisdn optional	String	MSISDN of a subscriber.
subscriberName optional	String	A nick name of a subscriber.
code optional	String	A verification code retrieved from Bot Registry.
promotion optional	Boolean	If a subscriber subscribe for promotional messages.

In operation **005**, the electronic device **101** may start to chat with a chatbot (start a chat thread) over the RCS network **103**. For example, the electronic device **101** may transmit a message ("Taxi") having a format under an RCS (e.g., a session initiation protocol (SIP) message format) and destined to an RCS identifier (e.g., an MSISDN) of the chatbot **104** to the RCS network **103**.

In operation **006**, a message generated by the electronic device **101** may be transmitted to a BotAgent **142** of the platform server **102** over the RCS network **103**. The BotAgent **142** may be linked with the chatbot **104**.

In operation **007**, the BotService module **132** may convert a destination of the message, received in operation **006** by the BotAgent **142**, in the form of a URI. For this purpose, the BotService module **132** may refer to a correspondence relationship between the RCS identifier of the chatbot **104**, stored in the BotRegistry **122**, and a URI of the chatbot **104**.

In operation **008**, the BotService module **132** may transmit a message to the chatbot **104** specified by the URI. The platform server **102** may establish a connection based on hypertext transfer protocol over secure socket layer (HTTPS) with the chatbot **104** to transmit the message. In this case, the platform server **102** may certify the chatbot **104** based on the certificate of the chatbot **104** registered in operation **001**.

According to certain embodiments, a message transmitted to the chatbot **104** by the BotService module **132** of the platform server **102** in operation **008** may be formatted to include a header and a body. For example, the header and the body may be formatted as shown in Tables 7 and 8 below.

TABLE 7

Field	Type	Description
Content-Type	String	Content type of the request body: application/json

TABLE 8

Field	Type	Description
messageType	String	"Message": Message from end users.
botID	String	AppID value generated when the Bot was created in Bot Registry.

TABLE 8-continued

Field	Type	Description
chatID	String	chatID of the chat this message belongs to.
message	Message	Actual message sent from the user.
contacts	Contacts	Contact information for the message.

In operation **009**, the chatbot **104** may generate a response message ("Destination?") to the message ("Taxi") and may transmit the generated message to the BotService module **132** of the platform server **102**. According to various embodiments, the access token received in operation **001** may be included in some fields of the response message. The platform server **102** may certify whether the response message is generated and transmitted by an authorized chatbot using the token.

According to some embodiments, a message transmitted to the chatbot **104** by the BotService module **132** may be formatted to include a header, a parameter, and a body. For example, the header, the parameter, and the body may be formatted as shown in Tables 9 to 11 below.

TABLE 9

Field	Type	Description
Authorization	String	Access token given by Bot Registry.
Content-Type	String	Content type of the request body: application/json

TABLE 10

Field	Type	Description
botID	String	BotID value generated when the Bot was created in Bot Registry.

TABLE 11

Field	Type	Description
chatID optional	String	chatID of the destination chat thread.
userID optional	String	userID of the recipient. Required only for unsolicited messages to a follower (i.e. when chatID is not available).
userNumber optional	String	Phone number of the recipient. Required only for unsolicited messages to a non-follower (i.e. when both chatID and userID is not available).
message	Message	Message to be sent to the user.

In operation **010**, the response message may be transmitted from the BotService module **132** to the BotAgent **142** to be converted into the format under the RCS (e.g., the SIP message format) by the BotAgent **142**. The converted message may be transmitted to the RCS network **103**.

In operation **011**, the response message converted into the message may be transmitted to the electronic device **101** of the user over the RCS network **103**.

FIG. **2** illustrates operations a method for providing dialog content according to certain embodiments.

Referring to the non-limiting example of FIG. **2**, the method for providing dialog content according to various embodiments may include operations **211** and **212** of registering a CP server, operations **221** to **228** of subscribing to the CP server, and chat operations **231** to **238**. The operations illustrated in FIG. **2** may be performed by, for example, an electronic device **101**, a platform server **102**, and a first CP server **104-1** such as shown in FIG. **1**A. Operations performed by each device may be implemented with instructions executable by a processor to be stored in a memory included in each device. Hereinafter, reference numerals of FIG. **1**A may be used for a description of FIG. **2**, and the first CP **104-1** may be referred to as a first chatbot **104-1**.

In operation **211**, a CP **14-1** (e.g., a developer of the first chatbot **104-1**) may press a "chatbot generation" button on a webpage operated by a platform server **102**. The CP **14-1** may provide information necessary to register the first chatbot **104-1** with a "chatbot store" to the platform server **102**. For example, the CP **14-1** may transmit a registration request message including an identifier (e.g., a uniform resource identifier (URI)) on a data network of the first chatbot **104-1** to the platform server **102** using the first chatbot **104-1**.

In operation S**212**, the platform server **102** may perform various processes for registering the first chatbot **104-1** with the "chatbot store". For example, the platform server **102** may allocate an identifier (e.g., an MSISDN) to be used in an RCS network **103** (an example of a first network) (hereinafter referred to as "RCS identifier") for the first chatbot **104-1**. The platform server **102** may store a first correspondence relationship between an RCS identifier of the first chatbot **104-1** and an identifier (e.g., a URI) on a data network of the first chatbot **104-1** in its memory.

Further, in operation **212**, the platform server **102** may authenticate the RCS network **103** or may configure various software modules (e.g., a BotAgent and a message queue described below) in the platform server **102** to be used for the first chatbot **104-1**. For example, the platform server **102** may generate an access token and may transmit the generated access token to the first chatbot **104-1** and/or may receive a certificate (e.g., a self-signed certificate or a certificate issued by a certificate authority (CA)) from the first chatbot **104-1**. The token and the certificate may be used to enhance security of a message.

In operation **221**, an electronic device **101** of a user may designate the first chatbot **104-1** by interacting with the platform server **102** over a data network (an example of a second network).

For example, the electronic device **101** may execute a specified application (e.g., a native messaging service application, a web browser application, a market application, or the like). The electronic device **101** may access the "chatbot store" through the specified application and may view a status, availability, an abstract description, or the like of each of chatbots registered with the "chatbot store". The electronic device **101** may designate a specific chatbot (e.g., the first chatbot **104-1**) among the chatbots registered with the "chatbot store". The specific chatbot (e.g., the first chatbot **104-1**) may be designated using an RCS identifier of the specific chatbot.

According to some embodiments, when the first chatbot **104-1** is designated, the electronic device **101** may transmit a subscribe request and may initiate a session (e.g., chatroom generation or the like) for transmitting and receiving a message with the first chatbot **104-1** after being approved by the first chatbot **104-1**. According to various embodiments, the electronic device **101** may request the user to perform user authentication to transmit the subscribe request. Further, when the user does not want to communicate with a specific chatbot, the electronic device **101** may transmit an unsubscribe request to the specific chatbot.

When the first chatbot **104-1** is designated by the electronic device **101**, in operation **222**, the platform server **102** may verify an RCS identifier of the electronic device **101**.

The platform server **102** may allocate a unique identifier corresponding to the verified identifier of the electronic device **101** to the electronic device **101**. A second correspondence relationship between the RCS identifier of the electronic device **101** and the unique identifier may be stored in a memory of the platform server **102**.

According to certain embodiments, the RCS identifier of the electronic device **101** may be, but is not limited to, an MSISDN. According to various embodiments, the RCS identifier may be an international mobile station identity (IMSI) number. According to various embodiments, the unique identifier allocated to the electronic device **101** may indicate the electronic device **101** (UserID) or may indicate a message exchange thread (ChatID) to which the electronic device **101** belongs.

In operation **223**, the platform server **102** may transmit a notification message to the first chatbot **104-1** over the data network. A destination of the notification message may be specified to a URI of the first chatbot **104-1**, and the notification message may include the unique identifier of the electronic device **101**, allocated in operation **222**. The URI of the first chatbot **104-1** may be converted from an RCS identifier of a chatbot using the first correspondence relationship stored in the platform server **102** in operation **212**.

According to some embodiments, the platform server **102** may establish a connection based on HTTPS with the first chatbot **104-1** to transmit the notification message. In this case, for example, the platform server **102** may certify the first chatbot **104-1** or a message transmitted and received with the first chatbot **104-1**.

For example, when accessing the URI of the first chatbot **104-1**, the platform server **102** may use an HTTPS protocol depending on the selection in operation **211** by the CP **14-1**. The platform server **102** may verify whether a certificate transmitted upon a connection with the first chatbot **104-1** to avoid a man-in-the middle attack is issued by a CA based on a public key infrastructure (PKI). For another example, the platform server **102** may verify whether the same certificate as the self-signed certificate registered in operation **211** by the CP **14-1** is transmitted. For another example, the CP **14-1** may use an HTTP protocol and may use a symmetric key selectively provided in operation **221** by the platform server **102** to protect a message transmitted and received between the platform server **102** and the first chatbot **104-1**.

In operation **224**, the first chatbot **104-1** may verify or obtain the unique identifier of the electronic device **101** which wants to subscribe to the first chatbot **104-1** from the notification message received in operation **223**.

In operation **225**, the first chatbot **104-1** may generate an initial response message (or a welcome message) destined to the verified unique identifier of the electronic device **101** and may transmit the generated initial response message to the platform server **102** over the data network. In other words, the platform server **102** may receive the initial response message from the first chatbot **104-1** in response to transmitting the notification message.

According to certain embodiments, the initial response message may include an image, an audio, a video, a natural language text, a pre-defined UI (or a button), or the like. The pre-defined UI may directly include information corresponding to a popular query or may include an object indirectly connected (or linked) to the information. Receiving the initial response message, the user of the electronic device **101** may respond to the initial response message by selecting the pre-defined UI without directly typing a separate text.

According to various embodiments, the initial response message may include, for example, meta-information for describing a service provided from the CP server. The meta-information may at least in part include information for describing the chatbot itself, for example, a name, a category, an address, a service list, a publisher, or a description. The initial response message may be a message initially provided in response to subscription by the electronic device **101** and may be referred to as a "welcome message".

According to some embodiments, the access token received in operation **212** may be included in some fields of the initial response message. The platform server **102** may certify whether the initial response message is generated and transmitted by an authorized chatbot using the token. For example, the first chatbot **104-1** may use an HTTPs protocol to enhance security. The first chatbot **104-1** may include the access token provided from the platform server **102** in the initial response message. The platform server **102** may certify whether the received initial response message is a message transmitted from the first chatbot **104-1** registered in operation **212** by verifying the access token.

In operation **226**, the platform server **102** may convert the initial response message received over the data network from the first chatbot **104-1** into a format under an RCS (e.g., an SIP message format). In this case, the platform server **102** may convert a destination of the initial response message from the unique identifier of the electronic device **101** to the RCS identifier of the electronic device **101**. According to certain embodiments, in converting the destination of the initial response message, the platform server **102** may use the second correspondence relationship stored in the memory in operation **222**.

In operation **227**, the platform server **102** may transmit the initial response message converted in operation **226** to the electronic device **101** over the RCS network **103**.

In operation **228**, the electronic device **101** may verify or obtain an identifier of the first chatbot **104-1** based on the RCS (an RCS identifier, for example, an MSISDN) from a source of the initial response message received in operation **227**. According to various embodiments, the electronic device **101** may obtain the RCS identifier of the first chatbot **104-1** in advance in operation **221**. In this case, operation **228** may be omitted. For example, when the first chatbot **104-1** is a chatbot provided from a messaging service application, the RCS identifier of the first chatbot **104-1** may be obtained in advance.

In operation **231**, the electronic device **101** may generate a message to be transmitted to the first chatbot **104-1** to use a service provided from the first chatbot **104-1**. For example, the electronic device **101** may generate a first message formatted under the RCS and destined to the RCS identifier of the first chatbot **104-1**.

According to various embodiments, the first message may have, for example, an SIP message format and may be referred to as a UserMessage in terms of being generated by the electronic device **101**. The first message may be implemented by, for example, an RCS-based SMS/MMS. As another example, the first message may include a text, an image, an audio, a video, or the like including a natural language.

In operation **232**, the electronic device **101** may transmit the first message generated in operation **231** to the platform server **102** over the RCS network **103**. According to some embodiments, the first message may be formatted under the RCS and may be destined to the RCS identifier of the first chatbot **104-1**.

In operation **233**, the platform server **102** may convert the first message received over the RCS network **103** from the electronic device **101** into a format under a protocol applied to the data network (e.g., the Internet protocol). In this case, the platform server **102** may convert a destination of the first message from the RCS identifier of the first chatbot **104-1** to an identifier (e.g., a URI) on the data network of the first chatbot **104-1**. According to certain embodiments, in converting the destination of the first message, the platform server **102** may use the first correspondence relationship stored in the memory in operation **212**.

In operation **234**, the platform server **102** may transmit the first message converted in operation **233** to the first chatbot **104-1** over the data network. According to various embodiments, the platform server **102** may establish a connection based on HTTPS with the first chatbot **104-1** to transmit the first message. In this case, the platform server **102** may certify the first chatbot **104-1** based on the certificate of the first chatbot **104-1**, received in operation **212**, (e.g., a certificate issued by a CA based on a PKI or a self-signed certificate) or may protect the first message through encryption based on a symmetric key.

In operation **235**, the first chatbot **104-1** may generate a second message in response to receiving the first message. The second message may be associated with a context of the first message and may include content of a service provided from the first chatbot **104-1**.

According to some embodiments, the second message may have, for example, a message format permitted by the data network. The second message may be destined to the unique identifier of the electronic device **101**. According to various embodiments, the second message may be referred to as a BotMessage in terms of being generated by the first chatbot **104-1**.

According to certain embodiments, the access token received in operation **212** may be included in some fields of the second message. The platform server **102** may certify whether the initial response message is generated and transmitted by an authorized chatbot using the token. For example, the first chatbot **104-1** may use the HTTPS protocol to enhance security. The first chatbot **104-1** may include the access token provided from the platform server **102** in the second message. The platform server **102** may certify whether the received second message is a message transmitted from the first chatbot **104-1** registered in operation **212** by verifying the access token.

According to various embodiments, the second message may include an image, an audio, a video, a natural language text, a pre-defined UI (e.g., a button), or the like. The pre-defined UI may directly include information corresponding to a popular query or may include an object indirectly connected (or linked) to the information. For example, when the first chatbot **104-1** is built by news media, the pre-defined UI may include a headline of news or may include a link of a news article having the headline. Receiving the second message, the user of the electronic device **101** may respond to the second message by selecting the pre-defined UI without directly typing a separate text.

According to some embodiments, the first chatbot **104-1** may include an NLP module associated with a service provided by the first chatbot **104-1**. The first chatbot **104-1** may derive a meaning or context of the first message received from the electronic device **101** using the NLP module and may automatically generate the second message corresponding to the meaning or context. According to various embodiments, when the first chatbot **104-1** does not include the NLP module, it may derive a meaning or context of the first message received from the electronic device **101** by interacting with an external server comprising the NLP module.

In operation **236**, the first chatbot **104-1** may transmit the second message destined to the unique identifier of the electronic device **101** to the platform server **102** over the data network.

In operation **237**, the platform server **102** may convert the second message received in operation **236** into a format within the RCS (e.g., an SIP message format). In this case, the platform server **102** may convert a destination of the second message from the unique identifier of the electronic device **101** to the RCS identifier of the electronic device **101**. According to certain embodiments, in converting the destination of the second message, the platform server **102** may use the second correspondence relationship stored in the memory in operation **222**.

In operation **238**, the platform server **102** may transmit the second message to the electronic device **101** over the RCS network **103**. After operation **238**, operations **231** to **238** may be repeatedly performed. According to various embodiments, the first chatbot **104-1** may receive two or more second messages as a response to the first message received from the electronic device **101**.

In FIG. **2**, at least one embodiment is exemplified as a chat (i.e., message transmission and reception) between the single chatbot **104-1** and the single electronic device **101**. However, embodiments are not limited thereto. According to various embodiments, a group chat, such as a chat between a single electronic device and a plurality of bots, a chat between a plurality of electronic devices and a single bot, or a chat between the plurality of electronic devices and the plurality of bots, may be performed in a similar manner based on the operation shown in FIG. **2**.

FIGS. **3**A and **3**B illustrate a GUI of an electronic device according to certain embodiments.

Referring to the non-limiting examples of FIGS. **3**A and **3**B, GUI screens **301** to **306** of an electronic device **300** which performs a method for providing dialog content according to various embodiments are shown. The GUI screens **301** to **306** may be screens where a native messaging service application of the electronic device **300** is executed. As described with reference to FIG. **2**, the electronic device **300** may transmit and receive a message to and from a chatbot over an RCS network and a platform server using the native messaging service application. As described with regard to the non-limiting examples of FIGS. **3**A and **3**B, each of chatbots may be registered in advance with the platform server and may include an NLP module.

Referring to the non-limiting example of FIG. **3**A, the electronic device **300** may execute the native messaging service application and may output the GUI screen **301** on a touch screen display. For example, a search field **311** and UI objects **321** indicating a chatroom may be included in the GUI screen **301**. A user may enter a keyword (e.g., a contact name, a chatroom name, a chatbot name, a specific keyword, or the like) in the search field **311** to search for a chatroom including the keyword or a user (or a chatbot) indicated by the keyword. For another example, when the user selects one of the UI objects **312** indicating the chatroom, the electronic device **300** may display a chatroom screen corresponding to the selected UI object.

According to some embodiments, the user may perform a touch swipe **31** on any location of the GUI screen **301**. The electronic device **300** may output the GUI screen **302** on the touch screen display in response to the touch swipe **31**.

According to certain embodiments, a search field **321** and UI objects **322** indicating a chatbot to which the user subscribes may be included in the GUI screen **302**. For example, the user may enter a keyword associated with a service he or she wants to receive in the search field **321**. The keyword may be transmitted to a platform server which operates, for example, a "chatbot store". The platform server may provide a list of proper chatbot(s) to the user based on the keyword. The UI objects **322** indicating the chatbot may indicate chatbots to which the user subscribes in advance. For example, referring to the UI objects **322**, the chatbot to which the user subscribes in advance may include a "customer service (CS) Bot", a "Restaurant", and an "Appliance Bot".

According to various embodiments, the user may perform a selection (touch) **32** of a UI object of the "Appliance Bot" to receive a service provided from the "Appliance Bot". In response to the selection **32**, the electronic device **300** may output the GUI screen **303** on the touch screen display.

According to some embodiments, the GUI screen **303** may include information **331** of the "Appliance Bot" selected by the user and a button **332** for starting to chat with the "Appliance Bot". For example, the information **331** of the "Appliance Bot" may include an image associated with the "Appliance Bot", a phone number (e.g., 8215883366) allocated to the "Appliance Bot", a soft button configured to initiate to make a call using the phone number, and a soft button linked to a website operated by the "Appliance Bot".

According to certain embodiments, the user may perform a selection (touch) **33** of the button **332** to start to chat with the "Appliance Bot" (to initiate a chat thread). In response to the selection **33**, the electronic device **300** may output the GUI screen **304** shown in FIG. **3**B on the touch screen display.

Referring to the GUI screen **304** of FIG. **3**B, a chatroom capable of transmitting and receiving a message with the "Appliance Bot" is shown. When a chat with the user of the electronic device **300** is initiated, the "Appliance Bot" may transmit an initial response message (a welcome message) **341** to the electronic device **300** through a platform server (e.g., a platform server **102** of FIG. **1**A) and an RCS network (or an RCS network **103** of FIG. **1**A). For example, the initial response message **341** received at the electronic device **300** may be an SIP message. The electronic device **300** may display the received initial response message **341** on the chatroom.

For example, the initial response message **341** may include information associated with a description for a service provided from the electronic device **300** and pre-defined UIs (e.g., buttons) **341-1** and **341-2**. The pre-defined UIs **341-1** and **341-2** may be displayed together with the description for the service on the chatroom. For example, the button **341-1** may be a button for starting product registration, and the button **342-2** may be a button linked to a webpage operated by a CP (e.g., a maker) of the "Appliance Bot".

According to various embodiments, the user may perform a selection (touch) **34** of the button **342-1** for product registration. In response to the selection **34**, the electronic device **300** may output the GUI screen **350** on the touch screen display. According to various embodiments, the user may enter a natural language or a keyword intended for product registration in an input field **343** displayed on a lower end of the chatroom. For example, the user may directly enter a natural language or a keyword in the input field **343** using a soft keyboard. For another example, the user may provide utterance including the natural language or keyword to the electronic device **300**. In this case, the electronic device **300** may display a voice-recognized text based on speech to text (STT) technology on the input field **343**.

Referring to the GUI screen **305**, the electronic device **300** may display a message **351** indicating the selection of the button **342-1**, a response message **352** to the message **351**, and buttons **353-1** and **353-2** below existing message and buttons **341**, **342-1** and **342-2**. The response message **352** may be a message generated by the "Appliance Bot" and may include information associated with a notification of taking a photo for product registration and the buttons **352**, **353-1**, and **353-2**. For example, the button **353-1** may be a button for initiating to take a photo, and the button **353-2** may be a button for guiding the user to a location to which a target (e.g., a label) to take a photo.

According to some embodiments, the user may perform a selection (touch) **35** of the button **353-1** to proceed with taking a photo for product registration. In response to the selection **35**, the electronic device **300** may output the GUI screen **306** on the touch screen display. According to various embodiments, the user may enter a natural language or a keyword intended to take a photo in an input field **354** displayed on a lower end of the chatroom.

Referring to the GUI screen **306**, the electronic device **300** may display a message **361** indicating the selection of the button **353-1** and a response message **362** to the message **361** below existing message and buttons **351**, **352**, **353-1**, and **353-2**. The response message **362** may be a message generated by the "Appliance Bot" and may include an image and text for guiding the user to a target (e.g., a label) to take a photo.

According to certain embodiments, the user may perform a selection (touch) **36** of a button **363** located at a lower end of the chatroom to drive a camera. When the selection **36** is performed, the electronic device **300** may drive a camera embedded therein. The user may take a photo of a label of a product using the camera. According to various embodiments, the user may enter a natural language or a keyword intended to drive the camera in an input field **364** located at a lower end of the chatroom.

According to another embodiment, the user may attach a photo of a product label stored in a memory of the electronic device **300**, through a separate menu connected through the button **363** located at a lower end of the chatroom, rather than taking a photo of a product label.

FIG. **4** illustrates, in block diagram format, an electronic device in a system, according to various embodiments.

Referring to the non-limiting example of FIG. **4**, an electronic device **401** in a network environment **400** may communicate with a platform server **402** or a CP server (chatbot) **404** over a first network **499-1** (e.g., an RCS network) and a second network **499-2** (e.g., a data network). The electronic device **401**, the platform server **402**, and the CP server **404** may correspond to an electronic device **101**, a platform server **102**, and CP servers **104-1** and **104-2**, respectively, such as shown in FIG. **1**A.

According to some embodiments, the electronic device **401** may include a bus **410**, a processor **420**, a memory **430**, an input device **450** (e.g., a micro-phone or a mouse), a display device **460**, an audio module **470**, a sensor module **476**, an interface **477**, a haptic module **479**, a camera module **480**, a power management module **488**, a battery **489**, a communication module **490**, and a subscriber identification module **496**. According to certain embodiments, the electronic device **401** may not include at least one (e.g., the display device **460** or the camera module **480**) of the

above-described elements or may further include other element(s) (e.g., a housing forming an appearance of the electronic device **401**).

The bus **410** may interconnect the above-described elements **420** to **490** and may include a circuit for conveying signals (e.g., a control message or data) between the above-described elements.

The processor **420** may include one or more of a central processing unit (CPU), an application processor (AP), a graphic processing unit (GPU), an image signal processor (ISP) of a camera or a communication processor (CP). According to various embodiments, the processor **420** may be implemented with a system on chip (SoC) or a system in package (SiP).

For example, the processor **420** may drive an operating system (OS) or an application program (e.g., a native messaging service application, a web browser application, a market application, and the like) to control at least one of another element (e.g., hardware or software element) connected to the processor **420** and may process and compute various data. The processor **420** may be electrically connected with load other elements (e.g., the memory **430**, the communication module **490**), and may load a command or data, which is received from at least one of other elements, into a volatile memory **432** to process the command or data and may store the result data into a nonvolatile memory **434**.

According to some embodiments of the present disclosure, performing a specific operation at each of the electronic device **401**, the platform server **402**, and the CP server **404** may be understood as being performed by a processor included in each of the devices **401**, **402**, and **404**.

The memory **430** may include, for example, the volatile memory **432** or the nonvolatile memory **434**. The volatile memory **432** may include, for example, a random access memory (RAM) (e.g., a dynamic RAM (DRAM), a static RAM (SRAM), or a synchronous DRAM (SDRAM)). The nonvolatile memory **434** may include, for example, a programmable read-only memory (PROM), an one time PROM (OTPROM), an erasable PROM (EPROM), an electrically EPROM (EEPROM), a mask ROM, a flash ROM, a flash memory, a hard disk drive (HDD), or a solid-state drive (SSD). In addition, the nonvolatile memory **434** may be configured in the form of an internal memory **436** or the form of an external memory **438** which is available through connection only if necessary, according to the connection with the electronic device **401**. The external memory **438** may further include a flash drive such as compact flash (CF), secure digital (SD), micro secure digital (Micro-SD), mini secure digital (Mini-SD), extreme digital (xD), a multimedia card (MMC), or a memory stick. The external memory **438** may be operatively or physically connected with the electronic device **401** in a wired manner (e.g., a cable or a universal serial bus (USB)) or a wireless (e.g., Bluetooth) manner.

For example, the memory **430** may store, for example, at least one different software element, such as a command or data (e.g., the above-described first and/or second corresponding relation) associated with the program **440**, of the electronic device **401**. The program **440** may include, for example, a kernel **441**, a library **443**, an application framework **445** or an application program (interchangeably, "application") **447**.

The input device **450** may include a microphone, a mouse, or a keyboard. According to some embodiments, the keyboard may include a keyboard physically connected or a virtual keyboard displayed through the display **460**.

The display **460** may be exposed through at least one surface (e.g., a front surface, a side surface, or the like) of a housing forming an appearance of the electronic device **401**. The display **460** may include a display, a hologram device or a projector, and a control circuit to control a relevant device. The display may include, for example, a liquid crystal display (LCD), a light emitting diode (LED) display, an organic LED (OLED) display, a microelectromechanical systems (MEMS) display, or an electronic paper display. According to certain embodiments, the display may be flexibly, transparently, or wearably implemented. The display may include a touch circuitry, which is able to detect a user's input such as a gesture input, a proximity input, or a hovering input or a pressure sensor (interchangeably, a force sensor) which is able to measure the intensity of the pressure by the touch. The touch circuit or the pressure sensor may be implemented integrally with the display or may be implemented with at least one sensor separately from the display. The hologram device may show a stereoscopic image in a space using interference of light. The projector may project light onto a screen to display an image. The screen may be located inside or outside the electronic device **401**.

The audio module **470** may convert, for example, a sound into an electrical signal or an electrical signal into sound. According to various embodiments, the audio module **470** may acquire sound through the input device **450** (e.g., a microphone) or may output sound through an output device (not illustrated) (e.g., a speaker or a receiver) included in the electronic device **401**, an external electronic device (e.g., the electronic device **402** (e.g., a wireless speaker or a wireless headphone)) connected with the electronic device **401** or an electronic device **401** (e.g., a wired speaker or a wired headphone).

The sensor module **476** may measure or detect, for example, an internal operating state (e.g., power or temperature) of the electronic device **401** or an external environment state (e.g., an altitude, a humidity, or brightness) to generate an electrical signal or a data value corresponding to the information of the measured state or the detected state. The sensor module **476** may include, for example, at least one of a gesture sensor, a gyro sensor, a barometric pressure sensor, a magnetic sensor, an acceleration sensor, a grip sensor, a proximity sensor, a color sensor (e.g., a red, green, blue (RGB) sensor), an infrared sensor, a biometric sensor (e.g., an iris sensor, a fingerprint senor, a heartbeat rate monitoring (FIRM) sensor, an e-nose sensor, an electromyography (EMG) sensor, an electroencephalogram (EEG) sensor, an electrocardiogram (ECG) sensor), a temperature sensor, a humidity sensor, an illuminance sensor, or an UV sensor. The sensor module **476** may further include a control circuit for controlling at least one or more sensors included therein. According to some embodiments, the sensor module **476** may be controlled by using the processor **420** or a processor (e.g., a sensor hub) separate from the processor **420**. In the case that the separate processor (e.g., a sensor hub) is used, while the processor **420** is in a sleep state, the separate processor may operate without awakening the processor **420** to control at least a portion of the operation or the state of the sensor module **476**.

According to certain embodiments, the interface **477** may include a high definition multimedia interface (HDMI), a universal serial bus (USB), an optical interface, a recommended standard 232 (RS-232), a D-subminiature (D-sub), a mobile high-definition link (MHL) interface, a SD card/MMC (multi-media card) interface, or an audio interface. A connector **478** may physically connect the electronic device

401 and the electronic device 406. According to various embodiments, the connector 478 may include, for example, an USB connector, an SD card/MMC connector, or an audio connector (e.g., a headphone connector).

The haptic module 479 may convert an electrical signal into mechanical stimulation (e.g., vibration or motion) or into electrical stimulation. For example, the haptic module 479 may apply tactile or kinesthetic stimulation to a user. The haptic module 479 may include, for example, a motor, a piezoelectric element, or an electric stimulator.

The camera module 480 may capture, for example, a still image and a moving picture. According to some embodiments, the camera module 480 may include at least one lens (e.g., a wide-angle lens and a telephoto lens, or a front lens and a rear lens), an image sensor, an image signal processor, or a flash (e.g., a light emitting diode or a xenon lamp).

The power management module 488, which is to manage the power of the electronic device 401, may constitute at least a portion of a power management integrated circuit (PMIC).

The battery 489 may include a primary cell, a secondary cell, or a fuel cell and may be recharged by an external power source to supply power at least one element of the electronic device 401.

The communication module 490 may support to establish a communication channel over, for example, the first network 499-1 and the second network 499-2 and may perform communication (e.g., message/data transmission and reception) using the established communication channel. According to certain embodiments, the communication module 490 may include a first communication module 491 and a second communication module 492.

According to various embodiments, the first communication module 491 may communicate over the first network 499-1 (e.g., a telephone network) compliant with a first protocol. The first protocol may include an RCS. The first network 499-1 compliant with the RCS may be referred to as an RCS network. An identifier of each of the devices 401, 402, and 404 which accesses the RCS network may be represented as an MSISDN or an IMSI.

According to some embodiments, the first communication module 491 may support cellular communication. The first communication module 491 may identify and authenticate the electronic device 401 in a communication network using, for example, a subscriber identity module 496. According to certain embodiments, the first communication module 491 may include a CP independent of the processor 420 (e.g., an AP). In this case, the CP may perform at least some of, for example, functions associated with at least one of the elements 410 to 496 of the electronic device 401, rather than the processor 420 while the processor 420 is in an inactive (e.g., sleep) state or together with the processor 420 while the processor 420 is in active state.

According to various embodiments, the second communication module 492 may communicate over the second network 499-2 compliant with a second protocol. The second protocol may include an Internet protocol or the like. The second network 499-2 compliant with the second protocol may include, for example, a data network, the Internet, an IP network, or the like. An identifier of each of the devices 401, 402, and 404 which accesses the second network 499-2 may be represented as a URI.

According to various embodiments, all or a part of operations that the electronic device 401 will perform may be executed by another or a plurality of electronic devices. According to some embodiments, in the case that the electronic device 401 executes any function or service automatically or in response to a request, the electronic device 401 may not perform the function or the service internally, but may alternatively or additionally transmit requests for at least a part of a function associated with the electronic device 401 to any other device. The other electronic device may execute the requested function or additional function and may transmit the execution result to the electronic device 401. The electronic device 401 may provide the requested function or service using the received result or may additionally process the received result to provide the requested function or service. To this end, for example, cloud computing, distributed computing, or client-server computing may be used.

In the non-limiting example of FIG. 4, hardware elements are described with respect to the electronic device 401. The platform server 402 and/or the CP server 404 shown in FIG. 4 may include the same or similar hardware elements to the electronic device 401. Similar to the electronic device 401, the platform server 402 may include, for example, a processor, a memory, a first communication module, and a second communication module. According to various embodiments, the CP server 404 may further include an NLP module 444.

FIG. 5 illustrates, in block diagram format, a platform server according to certain embodiments.

Referring to the non-limiting example of FIG. 5, a system 500 for providing dialog content according to various embodiments may include electronic devices 501-1 to 501-M, a platform server 502, an RCS network 503, chatbots 504-1 to 504-N, and a data network 505. According to some embodiments, the platform server 502 may be connected with the plurality of electronic devices 501-1 to 501-M over the RCS network 503 and may be connected with the plurality of chatbots 504-1 to 504-N over the data network (e.g., the Internet) 505.

The platform server 502 according to certain embodiments may include a BotService module 510, a BotRegistry 520, a BotDB 525, a UserRegistry 530, a UserDB 535, an Exchange 540, BotAgents 550-1 and 550-2, a Dummy BotAgent 550-D, a BotAgentManager 560, a BotAgentDB 565, a BotServiceQueue 570, TargetQueues 580T-1 and 580T-2, ServiceQueues 580S-1 and 580S-2, and a GlobalQueue 590. The elements 510 to 590 may be software modules and may be loaded on a memory. A function allocated to each of the elements 510 to 590 may be executed by a computing resource of a processor. Thus, an operation of each of the elements 510 to 590 may be substantially understood as an operation of the processor. Further, the queue and the DB among the elements 510 to 590 may be understood as some elements of the memory.

The BotService module 510 may play a role as an upstream mediator of the system 500 for providing the dialog content. The BotService module 510 may route a message between the chatbots 504-1 to 504-N and the Exchange 540 (a downtown mediator).

According to various embodiments, the BotService module 510 may mutually convert a destination identifier and/or a source identifier of messages processed by the BotService module 510. For example, the BotService module 510 may convert a destination of a UserMessage generated by the first electronic device 501-1 from an MSISDN to a URI and/or may convert a source of the UserMessage from the MSISDN to a unique identifier. For another example, the BotService module 510 may convert a source of a BotMessage generated by the first chatbot 504-1 from a URI to an MSISDN and/or may convert a destination of the BotMessage from a unique identifier to the MSISDN.

For this purpose, the BotService module **510** may communicate with the BotRegistry **520** to retrieve a URI (e.g., a callback-URL) of each of the chatbots **504-1** to **504**-N and an MSISDN corresponding to the URI. Further, the BotService module **510** may communicate with the UserRegistry **530** to retrieve a unique identifier (e.g., UserID, ChatID, or the like) of each of the electronic devices **501-1** to **501**-M of a user or an MSISDN corresponding to the unique identifier.

According to various embodiments, the BotService module **510** may listen to a create notification from a newly published chatbot and may communicate with the BotRegistry **520** to register the newly published chatbot.

The BotRegistry **520** may manage bot information (e.g., a URI, an MSISDN, or the like of a chatbot) stored in the BotDB **525**. For example, the BotRegistry **520** may read/write the bot information under control of the BotService module **510**.

The UserRegistry **530** may manage user/subscriber information (e.g., a UserID or a chatID of the user, an MSISDN of an electronic device of the user, or the like) stored in the UserDB **535**. For example, the UserRegistry **530** may read/write the user/subscriber information under control of the BotService module **510**. According to various embodiments, the UserRegistry **530** may be integrated with the BotRegistry **520** to be managed.

The Exchange **540** may play a role as a downtown mediator of the system **500** for providing the dialog content. According to some embodiments, the Exchange **540** may route messages between the BotAgents **550-1** and **550-2** and the BotService module **510** which is the upstream mediator, using a specified key. The Exchange **540** may be designed based on a messaging broker platform. According to certain embodiments, the Exchange **540** may support publishing for a messaging workflow, subscription, routing, pattern matching, or the like. According to various embodiments, the Exchange **540** may listen to a notification from the BotAgentManager **560** to generate a new BotAgent to be allocated to a newly published chatbot.

Each of the BotAgents **550-1** and **550-2** may be an instance of a chatbot and a contact point of the user. According to various embodiments, each chatbot may be linked with a BotAgent corresponding one to one to each chatbot. For example, the first chatbot **504-1** may communicate with the first BotAgent **550-1**, and the second chatbot **504-2** may communicate with the second BotAgent **550-2**. The BotAgents **550-1** and **550-2** may communicate with the chatbots **504-1** and **504-2** corresponding respectively to the BotAgents **550-1** and **550-2** to collect messages generated by the electronic devices **501-1** to **501**-M of the user or transmit and distribute messages to the electronic devices **501-1** to **501**-M of the user. According to at least one embodiment, the chatbot and the BotAgent correspond to one another. However, embodiments are not limited thereto. According to various embodiments, a single chatbot may be linked with two or more BotAgents. For example, as a chatbot transmits and receives a plurality of messages with a plurality of electronic devices, when communication traffic is concentrated on one BotAgent, an additional BotAgent linked to the chatbot may be allocated for load balancing.

According to certain embodiments, the BotAgents **550-1** and **550-2** may convert a format of a UserMessage generated by each of the electronic devices **501-1** to **501**-M from an RCS format (an SIP message format) to a format suitable for a data network. Further, on the other hand, the BotAgents **550-1** and **550-2** may convert a format of a BotMessage generated by each of the chatbots **504-1** to **504**-N from a format based on the data network to the RCS format (the SIP message format).

Further, according to various embodiments, after receiving the MSISDN, the chatbots **504-1** and **504-2** may serve the user over the RCS network **503**. The BotAgents **550-1** and **550-2** corresponding respectively to chatbots **504-1** and **504-2** may play a role in managing an MSISDN of each of chatbots **504-1** and **504-2**, register with the RCS network **503**, or interfacing with a plurality of users.

A Dummy BotAgent **550**-D may be a reserved BotAgent which is not allocated to any chatbot. The Dummy BotAgent **550**-D may be allocated to a newly published chatbot by, for example, the BotAgentManager **560**.

The BotAgentManager **560** may manage a status of each of both the BotAgents **550-1** and **550-2** registered in the BotAgentDB **565**. For example, when the second BotAgent **550-2** does not transmit a signal of alive, the BotAgentManager **560** may dispose the second BotAgent **550-2** again. For another example, when a specific BotAgent is overloaded, the BotAgentManager **560** may allocate an additional BotAgent. In another example, when a newly published chatbot is registered, the BotAgentManager **560** may allocate the Dummy BotAgent **550**-D to the newly published chatbot.

The BotServiceQueue **570** may be a shared memory for communication between the Exchange **540** and the BotService module **510**. The BotServiceQueue **570** may be handled by the BotService module **510**. The BotService module **510** may use two channels to transmit and receive a UserMessage and a BotMessage. Between the two channels, the BotServiceQueue **570** may configure a receive channel of a UserMessage generated by each of the electronic devices **501-1** to **501**-M of the user.

The TargetQueues **580**T-**1** and **580**T-**2** and the ServiceQueues **580**S-**1** and **580**S-**2** may be shared memories in which a BotMessage generated by each of the chatbots **504-1** to **504**-N is stored before being transmitted to the BotAgents **550-1** and **550-2**. The TargetQueues **580**T-**1** and **580**T-**2** and the ServiceQueues **580**S-**1** and **580**S-**2** may configure a transmit channel of a BotMessage generated by each of the chatbots **504-1** to **504**-N.

The TargetQueues **580**T-**1** and **580**T-**2** and the ServiceQueues **580**S-**1** and **580**S-**2** may be handled by the BotAgents **550-1** and **550-2** corresponding respectively to the TargetQueue **580**T-**1** and **580**T-**2** and the ServiceQueues **580**S-**1** and **580**S-**2**. For example, the TargetQueue **580**T-**1** and the ServiceQueue **580**S-**1** may be handled by the first BotAgent **550-1**.

The GlobalQueue **590** may be handled by the Dummy BotAgent **550**-D. When a newly published chatbot is allocated to the Dummy BotAgent **550**-D, the corresponding BotAgent may start to handle a TargetQueue or a ServiceQueue.

According to some embodiments, the first electronic device **501-1** may generate a UserMessage (e.g., an SIP message) on a chat thread with the first chatbot **504-1** and may transmit the UserMessage to the first BotAgent **550-1** over the RCS network **503**. The first BotAgent **550-1** may convert a format of a received message from a format of an SIP message to a format suitable for the data network **505** and may transmit the converted message to the Exchange **540**. The Exchange **540** may route a received message and may store the message in the BotServiceQueue **570**. The BotService module **510** may read the message stored in the BotServiceQueue **570** and may convert a destination of the message from an MSISDN to a URI with reference to the BotRegistry **520**. Subsequently, the BotService module **510**

may transmit the message to the first chatbot **504-1** indicated by the URI over the data network **505**.

According to other embodiments, the first chatbot **504-1** may generate a response message, a destination of which is set to a unique identifier of the first electronic device **501-1**, and may transmit the response message to the BotService module **510** over the data network **505**. The BotService module **510** may convert the destination of the response message into an MSISDN of the first electronic device **501-1** with reference to the UserRegistry **530** and may transmit the converted response message to the Exchange **540**. The Exchange **540** may route the received response message and may store the response message in the first TargetQueue **580**T-**1** handled by the first BotAgent **550-1**. The first BotAgent **550-1** may read the response message stored in the first TargetQueue **580**T-**1** and may convert a format of a message into a format of an SIP message. Subsequently, the first BotAgent **550-1** may transmit the response message to the first electronic device **501-1** indicated by the MSISDN over the RCS network **503**.

According to various embodiments, the response message may be an initial response message (for example, a welcome message) or may be a broadcast message transmitted to all electronic devices which subscribe to a service provided by the first chatbot **504-1**. According to various embodiments, although there is a message transmitted to the electronic devices **501-1** to **50-1**M which once transmitted and received the message, when a message transmission channel between a BotAgent and an electronic device is disconnected, the response message may be transmitted. In this case, the Exchange **540** may route the message and may store the message in the first service queue **580**S-**1** handled by the first BotAgent **550-1**. The first BotAgent **550-1** may read the message stored in the first ServiceQueue **580**S-**1** and may transmit the read message to an electronic device where a chat thread is initiated (in case of an initial response message) or all electronic devices which subscribe to a service provided by the first chatbot **504-1** (in case of a broadcast message).

The above-mentioned operation of each of the elements **510** to **590** of the platform server **502** is for explanation only, and the disclosure is not limited to the example of FIG. **5**. Hereinafter, in FIGS. **6**A to **6**E, a description will be given of detailed elements of the BotService module **510**, the BotRegistry **520**, the Exchange **540**, the (first) BotAgent **550-1**, and the BotAgentManager **560**.

FIG. **6**A illustrates a BotService module according to certain embodiments.

Referring to the non-limiting example of FIG. **6**A, a BotService module **510** may be designed based on an event based model. The BotService module **510** may include an EventBus **511**, a router **512**, a BotMessageHandler **513**, a UserMessageHandler **514**, a BotAddressDiscovery module **515**, and a MessageTranslator **516**.

The EventBus **511** may provide an environment capable of easily adding a new component in the future.

The router **512** may receive a message from three source ports, that is, a "Bot-port" connected with chatbots **504** to **504**-N, a "BotRegistry-port" connected with a BotRegistry **520**, and a "UserRegistry-port" connected with a UserRegistry **530** and may route the message to a specific MessageSender. For example, the router **512** may receive a message indicating a type (e.g., a general type, a broadcast type, or the like) of a message from the "Bot-port". The router **512** may receive a control message for managing (e.g., generating, deleting, or like) a BotDB **525** and a UserDB **535** of FIG. **5** from the "BotRegistry-port" and the "UserRegistry-port". Each of such messages may be routed to a specified handler.

The BotMessageHandler **513** may transmit a response (e.g., confirm, an error, or the like) or may handle specific messages pushed to the EventBus **511**. According to various embodiments, the BotMessageHandler **513** may handle a SEND message sent to a chatbot by a user, a REPLY message transmitted to the user by the chatbot, a BROADCAST message transmitted to a plurality of users by the chatbot, or the like.

According to some embodiments, the BotMessageHandler **513** may handle a REGISTER message for the BotRegistry **520** to notify a BotService module **510** that a new bot is published. Further, the BotMessageHandler **513** may handle a DEREGISTER message for the BotRegistry **520** to notify the BotService module **510** that a specific bot is unpublished.

The UserMessageHandler **514** may consume a message having a SEND type, targeted from the user to a chatbot, from the EventBus **511**. The UserMessageHandler **514** may handle a SEND message transmitted to the chatbot by the user.

The UserMessageHandler **514** may transmit a response to a source (i.e., an electronic device of the user) and may transmit a message to the chatbot. The UserMessageHandler **514** may query about an identifier of a specific bot using the BotAddressDiscovery module **515** to transmit the message to the chatbot. The UserMessageHandler **514** may push a searching request to the EventBus **511** to discover an identifier of a bot. When a response arrives from the BotAddressDiscovery module **515**, the UserMessageHandler **514** may transmit a message to the discovered identifier.

The BotAddressDiscovery module **515** may consume a request (or query) message from requesting to search for an address of a specific bot from the EventBus **511**. The BotAddressDiscovery module **515** may query the BotRegistry **520** and may push the result to the EventBus **511**.

The MessageTranslator **516** may transmit or consume messages between the EventBus **511** and an Exchange **540**. The MessageTranslator **516** may transmit a UserMessage generated by an electronic device of the user, stored in a BotServiceQueue **570**, to the EventBus **511**.

FIG. **6**B illustrates a BotRegistry according to certain embodiments.

Referring to the non-limiting example of FIG. **6**B, a BotRegistry **520** may manage bot information stored in a BotDB **525**. According to various embodiments, the BotRegistry **520** may be integrated with a UserRegistry **530** of FIG. **5** to be managed. In this case, the BotRegistry **520** may manage a chatbot and information of users (subscribers) who subscribe to a service provided by the chatbot. The BotRegistry **520** may play a role as a back-end of a chatbot store and a developer portal.

According to various embodiments, the BotRegistry **520** may include a RegistryServer **521**, a BotPublishHandler **522**, a BotSubscribeHandler **523**, and a BotDBWrapper **524**.

The RegistryServer **521** may analyze a request about a chatbot or a user, received from a WebUI (e.g., a UI of a chatbot store webpage or a UI by a chatbot store application), a BotService module **510**, or electronic devices **501-1** to **501**-M of FIG. **5** and may then transmit the analyzed result to a specified handler (e.g., the BotPublishHandler **522**, the BotSubscribeHandler **523**, and the like). The BotPublishHandler **522** may process and store information about a newly registered chatbot using the BotDBWrapper **524**. Further, the BotPublishHandler **522** may notify the

BotService module **510** that a new chatbot is published to proceed with an additional procedure of a BotAgent, described with reference to FIG. **6**A. The BotDBWrapper **524** may help the BotDB **525** to execute a related procedure.

FIG. **6**C illustrates an Exchange according to some embodiments.

Referring to the non-limiting example of FIG. **6**C, an Exchange **540** may include various routers for message transmission. According to certain embodiments, the Exchange **540** may include a BotServiceRouter **541**, a TargetRouter **542**, a ServiceRouter **543**, and a GlobalRouter **544**.

The BotServiceRouter **541** may receive a message from BotAgents **550-1** and **550-2** respectively targeted to chatbots. The message may be published to a BotServiceQueue **570** and may be transmitted to a BotService module **510**.

The TargetRouter **542** may receive a message from a chatbot associated with the BotAgents **550-1** and **550-2**. The TargetRouter **542** may route the message by using an identifier of an electron device which receives the message as a key. The key may be unique per message. The TargetRouter **542** may select TargetQueues **580**T-**1** and **580**T-**2** to which a chatbot wants to transmit a message.

The ServiceRouter **543** may be an alternative to the TargetRouter **542**. For example, although the message is an initial response message (a welcome message) or a broadcast message or although the message is a message for the electronic device **501-1** to **501**-M which once transmitted and received the message, when an existing message transmission channel between a BotAgent and an electronic device is disconnected due to any cause, the TargetRouter **542** does not find the TargetQueues **580**T-**1** and **580**T-**2**. In this case, the message may be transmitted to the ServiceRouter **543**. The ServiceRouter **543** may have ServiceQueues **580**S-**1** and **580**S-**2** mapped one to one or one to N to the chatbot using a Bot-ID of the chatbot. Such a message may be routed to one BotAgent mapped to a specific chatbot, depending on a routing policy between the BotAgents **550-1** and **550-2**.

The GlobalRouter **544** may play a role as a path for publishing a new bot. When the new chatbot is published, the GlobalRouter **544** may transmit a CREATE message to a BotAgent for the new chatbot, and the BotAgent may generate a connection relationship for a ServiceQueue. Thus, a new bot may be ready to provide a service.

FIG. **6**D illustrates a BotAgent according to various embodiments.

Referring to the non-limiting example of FIG. **6**D, a first BotAgent **550-1** according to some embodiments may include a UserAgent **551**, a HeartbeatGenerator **552**, a MessageConverter **553**, a MessagePublisher **554**, and a MessageSubscriber **555**. A second BotAgent **550-2** shown in FIG. **5** may include the same or similar elements to the first BotAgent **550-1**.

The UserAgent **551** may register an RCS identifier (an MSISDN) allocated to a first chatbot **504-1** of FIG. **5** with an RCS network **503**. The UserAgent **551** allocated to the first chatbot **504-1** may be regarded as one device (or subscriber) to be similar to electronic devices **501-1** to **501**-M of a user in the RCS network **503**.

The HeartbeatGenerator **552** may transmit a signal of alive for providing a notification that the first BotAgent **550-1** is operating to a BotAgentManager **560** of FIG. **5** on a periodic basis. For this purpose, the HeartbeatGenerator **552** may write a BotAgent's status in a BotAgentDB **565** on a periodic basis.

The MessageConverter **553** may convert a format of a message (an SIP message) based on the RCS network **503** into a format capable of being transmitted and received on a data network **505** of FIG. **5**, or vice versa.

The MessagePublisher **554** may transmit a message generated by each of the electronic device **501-1** to **501**-M of the user to an Exchange **540**.

The MessagePublisher **554** may read a message generated by the first chatbot **504-1** from a first TargetQueue **580**T-**1** or a first ServiceQueue **580**S-**1** and may transmit the read message to the MessageConverter **553**.

FIG. **6**E illustrates a BotAgentManager according to certain embodiments.

Referring to the non-limiting example of FIG. **6**E, a BotAgentManager **560** according to various embodiments may communicate with a BotAgentDB **565** to manage all BotAgents **550-1**, **550-2**, and **550**-D registered in the BotAgentDB **565**. The BotAgentManager **560** may transmit a message for managing the BotAgents **550-1**, **550-2**, and **550**-D to an Exchange **540**.

According to some embodiments, the BotAgentManager **560** may include a BotAgentMonitor **561**. For example, the BotAgentMonitor **561** may determine whether a BotAgent is operated, depending on whether the BotAgent transmits a signal of alive (e.g., a heartbeat signal).

FIG. **7** illustrates operations of a method for registering a chatbot with a platform server according to certain embodiments.

Referring to the non-limiting example of FIG. **7**, a method for registering the chatbot according to various embodiments may include operations **701** to **710**. Operations **701** to **710** may correspond to operations **211** and **212** of registering a CP server in FIG. **2**. In describing FIG. **7**, reference numerals used in FIG. **5** and FIGS. **6**A to **6**E will, as appropriate, be used.

In operation **701**, a CP may join a developer portal (e.g., a chatbot store webpage or a chatbot store application) operated by a platform server **502**.

In operation **702**, the CP may be allocated an MSISDN for a chatbot **504** from an RCS network operator.

In operation **703**, the CP may request the platform server **502** to register the chatbot **504**.

In operation **704**, a BotRegistry **520** of the platform server **502** may store information about the chatbot **504** in a BotDB **525** of FIG. **5**.

In operation **705**, the BotRegistry **520** of the platform server **502** may cache a callback-URL of the chatbot **504**.

In operation **706**, a BotService module **510** of the platform server **502** may provide a CREATE command to create a BotAgent to be allocated to the chatbot **504** to an Exchange **540**.

In operation **707**, the Exchange **540** of the platform server **502** may assign the CREATE command to a GlobalQueue **590** of FIG. **5**.

In operation **708**, the Exchange **540** of the platform server **502** may assign the BotAgent **550** to be allocated to the chatbot **504**.

In operation **709**, the assigned BotAgent **550** may register an MSISDN of the chatbot **504** with an RCS network.

In operation **710**, the BotAgent **550** may create a ServiceQueue and may bind the created ServiceQueue.

FIG. **8** illustrates operations of a platform server when registering a chatbot according to some embodiments.

Referring to the non-limiting example of FIG. **8**, the operation of the platform server when registering the chatbot according to certain embodiments may include operations **801** to **810**. Operations **801** to **810** may correspond to

operation **212** of registering a CP server in FIG. **2** and operations **706** to **710** of FIG. **7**. In a description of FIG. **8**, reference numerals in FIG. **5** and FIGS. **6**A to **6**E will be used as appropriate.

In operation **801**, a BotService module **510** may listen to a BotServiceQueue **570**.

In operation **802**, the BotService module **510** may assign a CREATE command to create a BotAgent to be allocated to a chatbot to a GlobalQueue **590**.

In operation **803**, a Dummy BotAgent **550** may listen to the GlobalQueue **590**.

In operation **804**, the Dummy BotAgent **550** may read a CREATE command to create a BotAgent from the GlobalQueue **590**. Thus, the Dummy BotAgent **550** may be converted into a BotAgent **550** corresponding to the chatbot.

In operation **805**, the BotAgent **550** may notify a BotAgentDB **565** of a status of the BotAgent **550**.

In operation **806**, the BotAgent **550** may request an RCS network to register an MSISDN of the chatbot and may perform user authentication in response to the request.

In operation **807**, the BotAgent **550** may register the MSISDN of the chatbot with the RCS network and may receive an OK message in response to the registration.

In operation **808**, the BotAgent **550** may publish the chatbot to the RCS network and may receive an OK message in response to the publication.

In operation **809**, the BotAgent **550** may listen to a ServiceQueue **580**S.

Thereafter, in operation **810**, a BotAgentManager **560** may monitor an operation status of the BotAgent **550** with reference to a BotAgentDB **565**.

According to various embodiments, a specific BotAgent allocated to a chatbot may fail to register with the RCS network or an operation of the specific BotAgent may be stopped due to various causes. In this case, a BotAgentManager (for example, a BotAgentManager **560** of FIG. **5**) may detect a problem of the BotAgent which fails to register the MSISDN of the chatbot. Under control of the BotAgentManager, the BotAgent which fails to register the MSISDN of the chatbot may delete its resource. A platform server may resume a new registration procedure (e.g., operations **801** to **810** of FIG. **2**).

Further, according to various embodiments, a developer of a chatbot may delete a chatbot which is no longer valid. When a request for the developer to delete the chatbot is transmitted to a platform server **502**, the BotService module **510** may transmit a DELETE command to delete a BotAgent corresponding to the chatbot of the developer to the BotAgent. Receiving the DELETE command, the BotAgent may deregister the chatbot on the RCS network **503** and may delete its resource from a BotAgentDB **565** of FIG. **5**. When the deletion is completed, the BotAgent may notify a BotRegistry **520** and/or the BotAgentManager **560** that the BotAgent is deleted.

FIG. **9** illustrates operations of a method for subscribing to a chatbot according to various embodiments.

Referring to the non-limiting example of FIG. **9**, a method for subscribing to the chatbot according to some embodiments may include operations **901** to **913**. Operations **901** to **913** may correspond to operations **221** to **228** of subscribing to a CP server in FIG. **2**. Operations **901** to **913** of FIG. **9** may be performed after, for example, chatbot registration in FIG. **7**. In a description of FIG. **9**, reference numerals used in FIG. **5** and FIGS. **6**A to **6**E will, as appropriate, be used.

In operation **901**, a user of user equipment (UE) **501** may search a chatbot **504** with a platform server **502**.

In operation **902**, a BotRegistry **520** of the platform server **502** may authenticate the UE **501**.

In operation **903**, the UE **501** may send a message for requesting to subscribe to the platform server **502**.

In operation **904**, the BotRegistry **520** of the platform server **502** may notify subscription by the UE **501** by sending a notification message.

In operation **905**, the chatbot **504** may send a welcome message (an initial response message) to the platform server **502**.

In operation **906**, a BotService module **510** of the platform server **502** may create a ChatID indicating a chat thread between the UE **501** and the chatbot **504**.

In operation **907**, the BotService module **510** of the platform server **502** may deliver the welcome message to an Exchange **540**.

In operation **908**, the Exchange **540** of the platform server **502** may search a TargetQueue (e.g., a TargetQueue **580**T of FIG. **5**) correspond to the chatbot **504**.

In operation **909**, since the UE **501** and the chatbot **504** do not transmit and receive a message previously (since there is no bound TargetQueue **580**T), the Exchange **540** of the platform server **502** may alternatively assign a ServiceQueue **580**S.

In operation **910**, the Exchange **540** of the platform server **502** may deliver the welcome message to a BotAgent **550**.

In operation **911**, the BotAgent **550** of the platform server **502** may listen to the TargetQueue **580**T.

In operation **912**, the BotAgent **550** of the platform server **502** may send the welcome message to the UE **501** over an RCS network.

In operation **913**, the UE **501** may receive the welcome message. For example, the UE **501** may display the welcome message on a display (e.g., a display device **460** of FIG. **4**).

FIG. **10** illustrates operations of a platform server when subscribing to a chatbot according to certain embodiments.

Referring to the non-limiting example of FIG. **10**, the operation of the platform server when subscribing to the chatbot according to various embodiments may include operations **1001** to **1006**. Operations **1001** to **1006** may correspond to operations **225** to **228** of FIG. **2** and operations **907** to **913** of FIG. **7**. In a description of FIG. **10**, reference numerals used in FIG. **5** and FIGS. **6**A to **6**E will be used.

In operation **1001**, a BotService module **510** may send a welcome message, received from a chatbot **504**, to a TargetQueue **580**T.

In operation **1002**, since a UE **501** and the chatbot **504** do not transmit and receive a message previously (since there is no bound TargetQueue **580**T), an Exchange **540** of a platform server **502** may forward the welcome message, received at the TargetQueue **580**T, to a ServiceQueue **580**S.

In operation **1003**, a BotAgent **550** of the platform server **502** may read the welcome message from the ServiceQueue **580**S.

In operation **1004**, the BotAgent **550** of the platform server **502** may determine whether there is already a message session relay protocol (MSRP) session with the UE **501** by referring to a BotAgentDB **565**.

In operation **1005**, since UE **501** and the chatbot **504** do not transmit and receive a message previously, the BotAgent **550** of the platform server **502** may newly listen to the TargetQueue **580**T.

In operation **1006**, the BotAgent **550** of the platform server **502** may initiate the MSRP session and may then send the welcome message to the UE **501** ("MSRP Send").

FIG. **11** illustrates operations of a chat method according to some embodiments.

Referring to the non-limiting example of FIG. **11**, the chat method according to certain embodiments may include operations **1101** to **1113**. Operations **1101** to **1113** may correspond to chat operations **231** to **238** of FIG. Operations **1101** to **1113** of FIG. **11** may be performed, for example, after a welcome message described with reference to FIG. **9** is transmitted. In a description of FIG. **11**, reference numerals used in FIG. **5** and FIGS. **6**A to **6**E will be used.

Hereinafter, operations **1101** to **1106** may indicate operations of sending a message to a chatbot **504** at a UE **501** of a user.

In operation **1101**, the UE **501** may generate an SIP message and may send the generated SIP message to a BotAgent **550** of a platform server **502** over an RCS network.

In operation **1102**, the BotAgent **550** of the platform server **502** may convert a format of the message into a format suitable for a data network.

In operation **1103**, the BotAgent **550** of the platform server **502** may deliver the message to an Exchange **540**.

In operation **1104**, the Exchange **540** of the platform server **502** may assign the message to a BotServiceQueue (e.g., a BotServiceQueue of FIG. **5**).

In operation **1105**, a BotService module **510** of the platform server **502** may read a message stored in the BotServiceQueue **570** and may query a BotRegistry **520** of FIG. **5** about a callback URL of a chatbot **504** which is a destination of the message.

In operation **1106**, the BotService module **510** of the platform server **502** may send the message to the chatbot **504**.

Hereinafter, operations **1107** to **1113** may indicate operations of sending a message to the UE **501** of the user at the chatbot **504**.

In operation **1107**, the chatbot **504** may generate a message and may send the generated message to the BotService module **510** of the platform server **502** over a data network.

In operation **1108**, the BotService module **510** of the platform server **502** may query a UserRegistry (e.g., a UserRegistry **530** of FIG. **5**) to obtain information of the user to receive the message, for example, an MSISDN of the UE **501**.

In operation **1109**, the BotService module **510** of the platform server **502** may deliver the message to the Exchange **540**.

In operation **1110**, the Exchange **540** of the platform server **502** may assign the message to a TargetQueue **580**T.

In operation **1111**, the BotAgent **550** of the platform server **502** may read a message stored in the TargetQueue **580**T and may convert a format of the message into a format (an SIP message format) suitable for an RCS network **503** of FIG. **5**.

In operation **1112**, the BotAgent **550** of the platform server **502** may send the message to the UE **501** over the RCS network **503**.

In operation **1113**, the UE **501** may receive the message over the RCS network **503**.

FIG. **12** illustrates operations of a platform server when chatting with a chatbot according to various embodiments.

Referring to the non-limiting example of FIG. **12**, the operation of the platform server when chatting with the chatbot according to some embodiments may include operations **1201** to **1211**. Operations **1201** to **1206** may correspond to operations **231** to **238** of FIG. **2** and operations **1101** to **1113** of FIG. **11**. Operations **1201** to **1211** of FIG. **12** may be performed, for example, after an MSRP session between a UE **501** and a platform server **502** is initiated after a welcome message described with reference to FIG. **10** is transmitted. In a description of FIG. **12**, reference numerals used in FIG. **5** and FIGS. **6**A to **6**E will be used as appropriate.

Hereinafter, operations **1201** to **1206** may indicate operations of sending a message to a chatbot **504** at the UE **501** of a user.

In operation **1201**, since there is a previously generated MSRP session, the UE **501** may send a message to a BotAgent **550** of a platform server **502** without additional message transmission and reception (e.g., see operation **1106** of FIG. **11**).

In operation **1202**, the UE **501** may receive an OK message ("MSRP 200 OK") from the BotAgent **550** of the platform server **502**.

In operation **1203**, the BotAgent **550** of the platform server **502** may convert a format of the message and may store the converted message in a BotServiceQueue **570**.

In operation **1204**, the BotService module **510** of the platform server **502** may read a message stored in the BotServiceQueue **570**.

In operation **1205**, the BotService module **510** of the platform server **502** may send the message to a callback URL of the chatbot **504**. According to various embodiments, in operation **1206**, the chatbot **504** may receive the message using a poll request, rather than operation **1205**.

Hereinafter, operations **1207** to **1211** may indicate operations of sending a message to the UE **501** of the user at the chatbot **504**.

In operation **1207**, the chatbot **504** may generate a message and may send the generated message to the BotService module **510** of the platform server **502** over a data network.

In operation **1208**, the BotService module **510** of the platform server **502** may store the message in a TargetQueue **580**T.

In operation **1209**, the BotAgent **550** of the platform server **502** may read the message stored in the TargetQueue **580**T and may convert a format of the message into a format (an SIP message format) suitable for an RCS network **503** of FIG. **5**.

In operation **1210**, the BotAgent **550** of the platform server **502** may send the message to the UE **501** using the previously generated MSRP session.

In operation **1211**, the BotAgent **550** of the platform server **502** may receive an OK message ("MSRP 220 OK") from the UE **501**.

In at least one embodiment as exemplified in FIG. **12**, operations **1201** to **1211** are performed after an MSRP session between the UE **501** and the platform server **502** described with reference to FIG. **10** is initiated. However, embodiments are not limited thereto. For example, before receiving a welcome message, the UE **501** may first send a message for requesting a constant service to the chatbot **504**. In this case, the UE **501** may initiate an MSRP session (e.g., an operation **1006** of FIG. **10**) with the platform server **502** and may then send the message to the chatbot **504** via the platform server **502** like, for example, operations **1201** to **1206**.

According to various embodiments of the present disclosure, message transmission and reception between a chatbot and an electronic device may be performed over an RCS network. The RCS network may provide higher accessibility than an OTT messaging service application. Further, since the RCS network is adopted as an international standard in GSMA, compatibility between carriers may be high. Contrary to providing an OTT-based chatbot service on an IP network, since a chatbot service based on such an RCS

network uses a phone number of a user, it may be provided over an existing network which provides an SMS/MMS. Thus, all subscribers connected to a cellular network may substantially become potential customers. In addition, when an RCS network operator agrees to being interoperable with its RCS network, it may provide a worldwide service.

An electronic device **401** according to various embodiments may include a housing, a display **460** configured to be exposed through one surface of the housing, a communication module **490** configured to communicate over a first network **499-1** compliant with a first protocol or a second network **499-2** compliant with a second protocol, a processor **420** configured to be electrically connected with the display **460** and the communication module **490**, and a memory **430** configured to be electrically connected with the processor **420** and store a specified application **447**. The memory **430** may store instructions, when executed, causing the processor **420** to execute the specified application **447**, designate a CP server **404** by interacting with a platform server **402** over the second network **499-2**, receive an initial response message generated by the designated CP server **404** over the first network **499-1**, and verify a first identifier of the designated CP server **404** based on the first protocol from a source of the initial response message.

According to some embodiments, the memory **430** may further store instructions, when executed, causing the processor **420** to generate a first message formatted under the first protocol and destined to the first identifier of the CP server and transmit the first message to the platform server **402** over the first network **499-1**. The platform server **402** may deliver the first message to the designated CP server **404**.

According to certain embodiments, the platform server **402** may be configured to convert the first message to be formatted under the second protocol, change a destination of the converted first message to the second identifier of the designated CP server **404** based on the second protocol, and deliver the converted first message to the designated CP server **404** indicated by the second identifier, over the second network.

According to various embodiments, the memory **430** may further store instructions, when executed, causing the processor **420** to receive a second message from the platform server **402** over the first network **499-1**. The second message may be generated by the CP server **404** and may include content associated with a context of the first message.

According to some embodiments, the first message may include a natural language (NL).

According to certain embodiments, the memory **430** may further store instructions, when executed, causing the processor **420** to transmit a request message at least in part including a search query associated with the designated CP server **404** to the platform server **402** via the communication module **490** and receive a list of CP servers associated with the search query in response to the request message. The designated CP server **404** may be selected among the CP servers included in the list.

A server **402** according to various embodiments may include a communication module **490** configured to communicate with an electronic device **401** over a first network **499-1** compliant with a first protocol and communicate with a CP server **404** over a second network compliant with a second protocol, a processor **420** configured with be electrically connected with the communication module **490**, and a memory **430** configured to be electrically connected with the processor **420** and store a first correspondence relationship between a first identifier of the CP server **404** based on the first protocol and a second identifier of the CP server **404** based on the second protocol. The memory **430** may store instructions, when executed, causing the processor **420** to receive a first message formatted under the first protocol and destined to the first identifier of the CP server **404**, from the electronic device **401** over the first network **499-1**, convert the first message to be formatted under the second protocol, change a destination of the converted first message to a second identifier of the CP server using the first correspondence relationship stored in the memory **430**, and transmit the converted first message to the CP server indicated by the second identifier, over the second network **499-2**.

According to some embodiments, the first protocol may include a rich communication suite (RCS).

According to certain embodiments, the first identifier may include a mobile station international subscriber directory number (MSISDN).

According to various embodiments, the second protocol may include an Internet protocol or an HTTPS.

According to some embodiments, the second identifier may include a uniform resource identifier (URI).

According to certain embodiments, the communication module **490** may be configured to further communicate with the electronic device **401** over the second network **499-2**. The memory **430** may further store instructions, when executed, causing the processor **420** to, when the CP server **404** is designated based on interacting with the electronic device **401** over the second network **499-2**, transmit a notification message to the CP server **404** over the second network **499-2**.

According to various embodiments, the memory **430** may further store instructions, when executed, causing the processor **420** to receive an initial response message from the CP server **404** over the second network **499-2** in response to transmitting the notification message, convert the initial response message to be formatted under the first protocol, and transmit the initial response message to the electronic device **401** over the first network **499-1**. The first message received from the electronic device **401** may be received after the initial response message is transmitted.

According to some embodiments, the electronic device **401** may be configured to verify the first identifier of the CP server **404** from a source of the received initial response message.

According to certain embodiments, the initial response message may include meta-information for describing a service provided from the CP server **404**.

According to various embodiments, the communication module **490** may be configured to further communicate with the electronic device **401** over the second network **499-2**. The memory **430** may further store instructions, when executed, causing the processor **420** to, when the CP server **404** is designated based on interacting with the electronic device **401** over the second network **499-2**, verify an identifier of the electronic device **401** based on the first protocol, allocate a unique identifier to the electronic device **401**, store a second correspondence relationship between the identifier of the electronic device **401** based on the first protocol and the allocated unique identifier in the memory **430**, and transmit a notification message including the unique identifier to the CP server **404** over the second network **499-2**.

According to some embodiments, the memory **430** may further store instructions, when executed, causing the processor **420** to receive an initial response message destined to the unique identifier from the CP server **404** over the second network **499-2** in response to transmitting the notification message, convert the initial response message to be format-

ted under the first protocol, change a destination of the initial response message to the identifier of the electronic device **401** based on the first protocol, using the second correspondence relationship stored in the memory **430**, and transmit the initial response message to the electronic device **401** over the first network **499-1**. The first message received from the electronic device **401** may be received after the initial response message is transmitted.

According to certain embodiments, the electronic device **401** may be configured to set a source of the received initial response message to the first identifier of the CP server **404**.

A server **402** according to various embodiments may include a communication module **490** configured with communicate with an electronic device **401** over a first network **499-1** compliant with a first protocol and communicate with a CP server **404** over a second network **499-2** compliant with a second protocol, a processor **420** configured with be electronically connected with the communication module **490**, and a memory **430** configured to be electrically connected with the processor **420** and store a second correspondence relationship between an identifier of the electronic device **401** based on the first protocol and a unique identifier allocated to the electronic device **401**. The memory **430** may store instructions, when executed, causing the processor **420** to receive a second message formatted under the second protocol and destined to the unique identifier allocated to the electronic device **401**, from the CP server **404** over the second network **499-2**, convert the second message to be formatted under the first protocol, change a destination of the converted second message to the identifier of the electronic device **401** based on the first protocol using the second correspondence relationship stored in the memory **430**, and transmit the converted second message to the electronic device **401** indicated by the identifier of the electronic device **401** based on the first protocol, over the first network **499-1**.

According to some embodiments, the CP server **404** may include a natural language processing (NLP) module **444** associated with a service provided from the CP server **404**. The second message may include a natural language generated by the NLP module **444**.

According to certain embodiments, the unique identifier may indicate the electronic device **401** or may indicate a message exchange thread to which the electronic device **401** belongs.

Various embodiments of the present disclosure and terms used herein are not intended to limit the technologies described in the present disclosure to specific embodiments, and it should be understood that the embodiments and the terms include modification, equivalent, and/or alternative on the corresponding embodiments described herein. With regard to description of drawings, similar elements may be marked by similar reference numerals. The terms of a singular form may include plural forms unless otherwise specified. In the disclosure disclosed herein, the expressions "A or B", "at least one of A and/or B", "at least one of A and/or B", "A, B, or C", or "at least one of A, B, and/or C", and the like used herein may include any and all combinations of one or more of the associated listed items. Expressions such as "first," or "second," and the like, may express their elements regardless of their priority or importance and may be used to distinguish one element from another element but is not limited to these components. When an (e.g., first) element is referred to as being "(operatively or communicatively) coupled with/to" or "connected to" another (e.g., second) element, it may be directly coupled with/to or connected to the other element or an intervening element (e.g., a third element) may be present.

According to the situation, the expression "adapted to or configured to" used herein may be interchangeably used as, for example, the expression "suitable for", "having the capacity to", "changed to", "made to", "capable of" or "designed to" in hardware or software. The expression "a device configured to" may mean that the device is "capable of" operating together with another device or other components. For example, a "processor configured to (or set to) perform A, B, and C" may mean a dedicated processor (e.g., an embedded processor) for performing corresponding operations or a generic-purpose processor (e.g., a central processing unit (CPU) or an application processor) which performs corresponding operations by executing one or more software programs which are stored in a memory device (e.g., the memory **430**).

The term "module" used herein may include a unit, which is implemented with hardware, software, or firmware, and may be interchangeably used with the terms "logic", "logical block", "component", "circuit", or the like. The "module" may be a minimum unit of an integrated component or a part thereof or may be a minimum unit for performing one or more functions or a part thereof. The "module" may be implemented mechanically or electronically and may include, for example, an application-specific IC (ASIC) chip, a field-programmable gate array (FPGA), and a programmable-logic device for performing some operations, which are known or will be developed.

According to various embodiments, at least a part of an apparatus (e.g., modules or functions thereof) or a method (e.g., operations) may be, for example, implemented by instructions stored in a computer-readable storage media (e.g., the memory **430**) in the form of a program module. The instruction, when executed by a processor (e.g., a processor **420**), may cause the processor to perform a function corresponding to the instruction. The computer-readable recording medium may include a hard disk, a floppy disk, a magnetic media (e.g., a magnetic tape), an optical media (e.g., a compact disc read only memory (CD-ROM) and a digital versatile disc (DVD), a magneto-optical media (e.g., a floptical disk)), an embedded memory, and the like. The one or more instructions may contain a code made by a compiler or a code executable by an interpreter.

Each element (e.g., a module or a program module) according to various embodiments may be composed of single entity or a plurality of entities, a part of the above-described sub-elements may be omitted or may further include other sub-elements. Alternatively or additionally, after being integrated in one entity, some elements (e.g., a module or a program module) may identically or similarly perform the function executed by each corresponding element before integration. According to various embodiments, operations executed by modules, program modules, or other elements may be executed by a successive method, a parallel method, a repeated method, or a heuristic method, or at least one part of operations may be executed in different sequences or omitted. Alternatively, other operations may be added.

Although the present disclosure has been described with various embodiments, various changes and modifications may be suggested to one skilled in the art. It is intended that the present disclosure encompass such changes and modifications as fall within the scope of the appended claims.

What is claimed is:

1. An electronic device, comprising:

a housing;

a display configured to be exposed through one surface of the housing;

a communication module configured to communicate over a rich communication suite (RCS) network compliant with a first protocol or an internet protocol (IP) network compliant with a second protocol;

a processor electrically connected with the display and the communication module; and

a memory electrically connected with the processor and configured to store a specified application that is able to interact with a platform server,

wherein the memory stores instructions that, when executed, cause the processor to:

execute the specified application;

designate a content provider (CP) server, from among a plurality of CP servers registered with the platform server, by interacting with the platform server over the IP network via the specified application;

receive, from the platform server, an initial response message generated by the designated CP server over the RCS network; and

verify a first identifier of the designated CP server based on the first protocol from a source of the initial response message, wherein the first identifier of the designated CP server indicates an identifier of the designated CP server among the plurality of CP servers.

2. The electronic device of claim **1**, wherein the memory further stores instructions that, when executed, cause the processor to:

generate a first message formatted under the first protocol and destined to the first identifier of the designated CP server; and

transmit the first message to the platform server over the RCS network,

wherein the platform server is configured to deliver the first message to the designated CP server.

3. The electronic device of claim **2**, wherein the platform server is configured to:

convert the first message to be formatted under the second protocol;

change a destination of the converted first message to a second identifier of the designated CP server based on the second protocol; and

deliver the converted first message to the designated CP server indicated by the second identifier, over the IP network.

4. The electronic device of claim **2**, wherein the memory further stores instructions that, when executed, cause the processor to:

receive a second message from the platform server over the RCS network,

wherein the second message is generated by the designated CP server and comprises content associated with a context of the first message.

5. The electronic device of claim **1**, wherein the memory further stores instructions that, when executed, cause the processor to:

transmit a request message at least in part including a search query associated with the designated CP server to the platform server via the communication module; and

receive a list of CP servers associated with the search query in response to the request message,

wherein the designated CP server is selected among the CP servers included in the list.

6. A server, comprising:

a communication module configured to communicate with an electronic device over a rich communication suite (RCS) network compliant with a first protocol and communicate with a content provider (CP) server over an internet protocol (IP) network compliant with a second protocol, the CP server being one of a plurality of CP servers registered with the server;

a processor electrically connected with the communication module; and

a memory electrically connected with the processor and configured to store a first correspondence relationship between a first identifier of the CP server based on the first protocol and a second identifier of the CP server based on the second protocol,

wherein the memory stores instructions that, when executed, cause the processor to:

receive a first message formatted under the first protocol and destined to the first identifier of the CP server, from the electronic device over the RCS network;

convert the first message to be formatted under the second protocol;

change a destination of the converted first message to the second identifier of the CP server using the first correspondence relationship stored in the memory; and

transmit the converted first message to the CP server indicated by the second identifier, over the IP network.

7. The server of claim **6**, wherein the first protocol comprises a rich communication suite (RCS).

8. The server of claim **6**, wherein the first identifier comprises a mobile station international subscriber directory number (MSISDN).

9. The server of claim **6**, wherein the second protocol comprises an Internet protocol.

10. The server of claim **6**, wherein the second identifier comprises a uniform resource identifier (URI).

11. The server of claim **6**, wherein the communication module is configured to:

further communicate with the electronic device over the IP network,

wherein the memory further stores instructions, that when executed, cause the processor to:

transmit a notification message to the CP server over the IP network when the CP server is designated based on interacting with the electronic device over the IP network.

12. The server of claim **11**, wherein the memory further stores instructions, that when executed, cause the processor to:

receive an initial response message from the CP server over the IP network in response to transmitting the notification message;

convert the initial response message to be formatted under the first protocol; and

transmit the initial response message to the electronic device over the RCS network,

wherein the first message received from the electronic device is received after the initial response message is transmitted.

13. The server of claim **12**, wherein the electronic device is configured to:

verify the first identifier of the CP server from a source of the received initial response message.

14. The server of claim **12**, wherein the initial response message comprises meta-information for describing a service provided from the CP server.

15. The server of claim **6**, wherein the communication module is configured to:

further communicate with the electronic device over the IP network,

wherein the memory further stores instructions, that when executed, cause the processor to:

verify an identifier of the electronic device based on the first protocol when the CP server is designated based on interacting with the electronic device over the IP network;

allocate a unique identifier to the electronic device;

store a second correspondence relationship between the identifier of the electronic device based on the first protocol and the allocated unique identifier in the memory; and

transmit a notification message including the unique identifier to the CP server over the IP network.

16. The server of claim **15**, wherein the memory further stores instructions, that when executed, cause the processor to:

receive an initial response message destined to the unique identifier from the CP server over the IP network in response to transmitting the notification message;

convert the initial response message to be formatted under the first protocol;

change a destination of the initial response message to the identifier of the electronic device based on the first protocol, using the second correspondence relationship stored in the memory; and

transmit the initial response message to the electronic device over the RCS network,

wherein the first message received from the electronic device is received after the initial response message is transmitted.

17. The server of claim **16**, wherein the electronic device is configured to:

set a source of the received initial response message to the first identifier of the CP server.

18. A server, comprising:

a communication module configured to communicate with an electronic device over a rich communication suite (RCS) network compliant with a first protocol and communicate with a content provider (CP) server over an internet protocol (IP) network compliant with a second protocol;

a processor electronically connected with the communication module; and

a memory electrically connected with the processor and store a second correspondence relationship between an identifier of the electronic device based on the first protocol and a unique identifier allocated to the electronic device,

wherein the memory stores instructions that, when executed, cause the processor to:

receive a second message formatted under the second protocol and destined to the unique identifier allocated to the electronic device, from the CP server over the IP network;

convert the second message to be formatted under the first protocol;

change a destination of the converted second message to the identifier of the electronic device based on the first protocol using the second correspondence relationship stored in the memory; and

transmit the converted second message to the electronic device indicated by the identifier of the electronic device based on the first protocol, over the RCS network.

19. The server of claim **18**, wherein the CP server comprises a natural language processing (NLP) module associated with a service provided from the CP server, and

wherein the second message comprises a natural language generated by the NLP module.

20. The server of claim **18**, wherein the unique identifier indicates the electronic device or indicates a message exchange thread to which the electronic device belongs.

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